Journal of Home Economics

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FEB 12 1947
DETROIT

VOLUME 39 NO. 2

Research Issue

Strengthening Our Cornerstone
Pearl P. Swanson

Functional Kitchen Storage in Terms of Body Economy
Mary Koll Heiner

A Nine-Year Study of the School Lunch
Pauline Beery Mack

The Assertive Behavior of Children as Related to Parent Behavior
Charlene Trumbo Meyer

Relative Serviceability of Three Weights of Wool Serge
Lillian O. Lund, Ethel L. Phelps, Helen Ward Norton, and *Barbara Bailey Miller*

Openings for Graduate Students
Nell B. Nichols

February 1947

Published by
AMERICAN HOME ECONOMICS ASSOCIATION
WASHINGTON, D. C.

In Our Next Issue . . .

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ASSOCIATION

620 Mills Building
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THE JOURNAL OF HOME ECONOMICS is published monthly, except July and August, by the American Home Economics Association.

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Active members of the American Home Economics Association pay $3 national dues in addition to state dues and receive the JOURNAL OF HOME ECONOMICS, $2 of the dues being assigned the JOURNAL subscription.

Notice of change in address should be received two weeks before the date of issue on which the change is to take effect. Both the *old address* and the *new address* should be given.

HOME VALUES

Essential personal and family values are reflected in your choice of a home. VIRGINIA CUTLER furnishes an effective guide in her report of research done in developing such a check list.

MEET OUR NEW EXECUTIVE SECRETARY

A warm welcome to AHEA's new executive secretary, Mildred Horton, and a fond farewell to her predecessor, Lelia Massey, are scheduled for March.

GIVE AND TAKE

BEULAH I. COON discusses some results of student participation in college curriculum studies. She gives faculty and student reactions to this democratic co-operative plan.

A CHALLENGING JOB

With the hope that the 30 million homemakers of the nation may thrill to the importance of homemaking and live it fully, MARGARET NOBEL SAVIN presents a job analysis of this many-sided profession.

SOME SIGNIFICANT QUOTES

The meat of the Research and Marketing Act of 1946 (the so-called Flannagan-Hope Act) as it has meaning for home economists is to be presented by RUTH O'BRIEN.

MEET THEM IN ST. LOUIS

As you read over plans afoot for AHEA's 38th annual meeting, scheduled for St. Louis, June 23 to 26, 1947, you will realize that there is your opportunity to combine professional contacts with a pleasurable vacation.

AMERICAN HOME ECONOMICS ASSOCIATION

Thirty-eighth Annual Meeting, St. Louis, Missouri, June 23 to 26, 1947

Annual meeting headquarters: Municipal Auditorium

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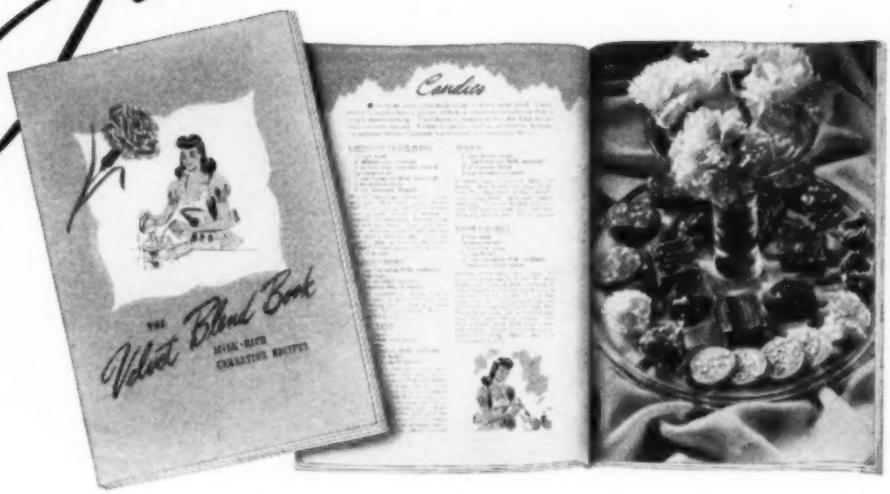
Just out!



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These recipes will convincingly demonstrate how this fine milk —heat-refined and homogenized to super-creamy smoothness—produces a velvet blend . . . gives foods superior consistency, flavor, and richness in vital milk nutrients. So—be *sure* you get a copy! Address Carnation Company, Dept. 751-A, Milwaukee 2, Wis.

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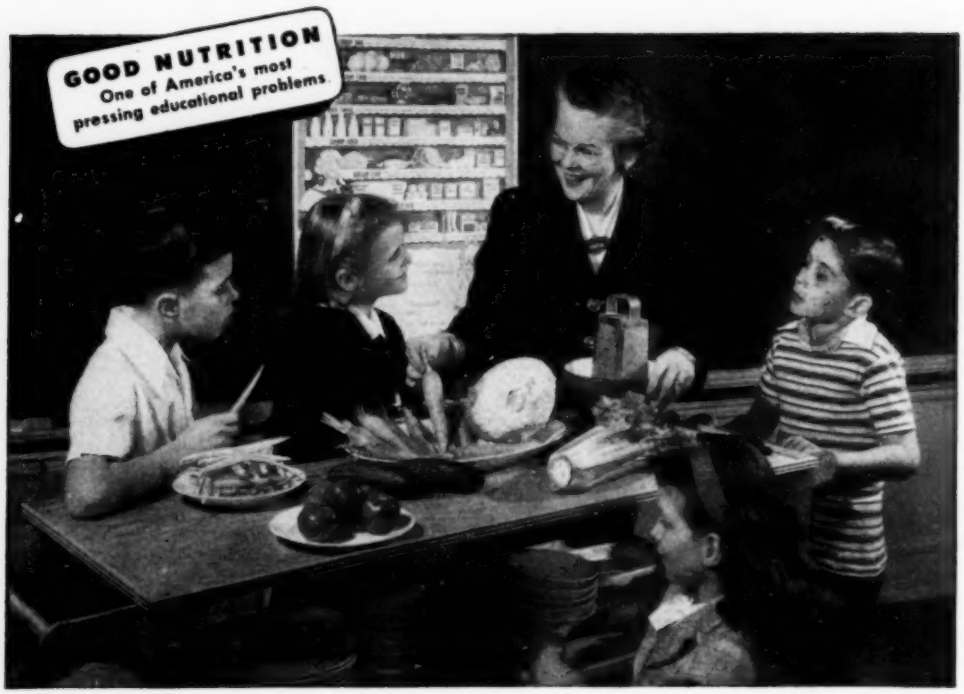

Nutrition à la *cart*

One day, not long ago, the children in a Georgia classroom looked up in surprise as a sturdy, unpainted wooden cart was wheeled in. The children clamored around the teacher, asking questions, examining the strange and wonderful wagon. Why was it here? What was it for? The answers are in a report from the "inventors," teachers of the East Griffin School, Spalding County, Georgia . . . one of many schools participating in a continuing program of nutrition emphasis.

"In order to bring the study of nutrition to the classrooms, we had the 'Nutrition Band Wagon' built as a food carrier and mobile demonstration table. The children were interested from the beginning, since they helped finish it—with sandpaper and varnish. The cart brought from the kitchen simple food items or food groups, such as carrot sticks and other raw vegetables. Then, a lesson about the specific foods was developed . . . uses, preparation, history . . . with the children participating in the demonstration. Often, they would share their experiences by wheeling the cart into other classrooms."

But is nutrition training like that necessary?

Consider a week-long check of the eating habits of 1,932 pupils in 8 Southern schools. Only 23.3% of the children's diets were good. 34.1% were fair and 42.6% definitely poor, according to standards used by many nutritionists. Comparable results in other sections of the country clearly demonstrate a similar need for special emphasis on nutrition.

Facts, ideas, plans and materials for a nutrition program adaptable to any curriculum are available to you. Please write:

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MEAT, POULTRY, FISH OR EGGS . . . or dried beans, peas, nuts or peanut butter. One serving of meat, poultry or fish a day, occasionally peas or beans instead. Three or four eggs each week.

BREAD, FLOUR, CEREALS . . . natural whole-grain or enriched or restored. Three or more servings a day.

BUTTER AND FORTIFIED MARGARINE . . . use for spreads and for seasoning as you like and as supplies permit.

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Journal of Home Economics

VOLUME 39
NUMBER 2

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Hot off the press

2 NEW MONTHLY BULLETINS

HOME ECONOMICS SECTION
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Newsletter
PREPARED FOR THE USE OF KITCHEN PLANNING CONSULTANTS BY THE SERVEL HOMEMAKER'S INSTITUTE, EVANSVILLE, IND.
ovember 1946

Now you can have a quick summary of changes in today's homemaking picture as they happen—mailed to you as a brand-new service of the Servel Homemaker's Institute. An up-to-the-minute Home Economics Section! A tuned-to-today Kitchen Planning Section! Just send for your free monthly copy of the Servel Newsletter.

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Which is the most sure-fire kitchen color
Why wallpaper won't wilt in up-to-date kitchens
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These were typical topics treated in a recent issue.

Future issues will bring you food flashes . . . cooking ideas . . . studies in step-saving kitchen arrangements.

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News of Kitchens
Psychology of color in kitchen work-rooms
Prefabricators need kitchen-planning help
New kitchens in old houses often more flexible
Solving the problem of high, wide doorways
Don't chain the ironing board!
First-floor laundries get the vote for convenience
New way to get easy-to-clean curved corners
Venetian blinds have removable slats
Unique patio-kitchen ideas
Latest Food Facts
Ten million dollars for school lunches
What's scarce . . . what's plentiful in this month's food markets
Big new nut crop
Has new nutrition knowledge lengthened life?
Sugar's waiting off-shore
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Cranberries for color
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BASIC BREAKFAST WALL CHART in two colors, shows a breakfast pattern of basic foods recommended by medical and nutritional authorities.

U. S. GOV'T MEAL PATTERN CHART illustrates suggested meals and meal patterns from the "Basic 7" food groups.

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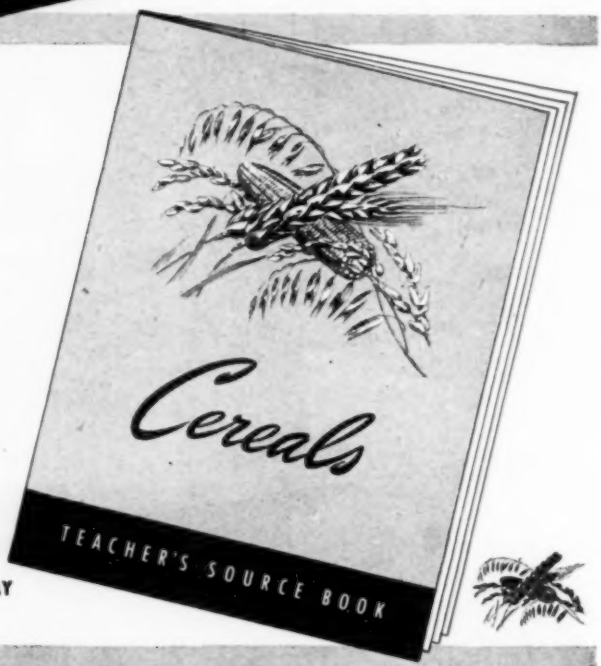
U. S. GOV'T MEAL PATTERN CHART described above is also a part of this unit.



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For instance Fruit Cocktail makes such a really fine first course or dessert, just as it comes from the can. In recipes that call for an assortment of fruits, quality Fruit Cocktail is both a time and money-saver. To gelatin molds, dessert or meat sauces and upside down cake, it gives not only variety and color, but also luscious flavor.

You might also point out that the quality of fruit cocktail is determined by the quality of the fruits the maker is willing to use. Libby's is made exclusively in Sunnyvale, California from fresh, whole peaches, pears, grapes and cherries from nearby orchards and vineyards. To these are added pineapple picked and packed at peak flavor in Hawaii. Here in Libby's are five fruits—*all* with the same glorious goodness you expect from the beautiful fruits you'd select for a centerpiece.

LIBBY McNEILL & LIBBY
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By MADALYN AVERY

Associate Professor of Physics, Kansas State College

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$4.50

Don't miss

America's Fabrics

***By* ZELMA BENDURE *and* GLADYS PFEIFFER.** This is the first complete source book of information on the history, manufacturing processes, characteristics and identification of all fabrics including laces, rugs and all clothing and home fabrics. It contains photographs of nearly 1000 modern fabrics, 100 of which are in full color, and about 500 photographs illustrating the principal steps in the manufacture of yarns and fabrics. It also includes a complete illustrated dictionary of fabrics and up-to-date information on testing and standards. $10.00

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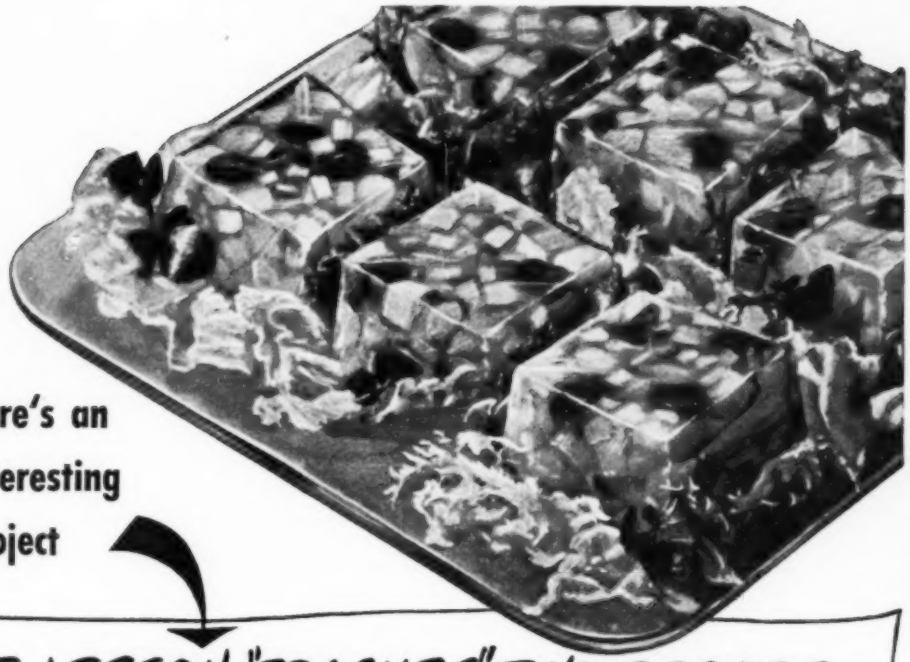

Here's an interesting project

ONE LESSON "TEACHES" TWO RECIPES

Never too early for a cook to learn how to make the most of a single recipe. Here's a good example of how it can be done. A good example too, of the versatility of Knox Gelatine!

If you are not on the Knox mailing list and have not received latest classroom material including our new recipe folder, "Luscious Pies and Candies," mail this coupon today!

RECIPE

FRUIT COCKTAIL SALAD MOLD

Soften: in: **1 envelope Knox Gelatine**
¼ cup lemon juice

Let this stand. Bring to boiling point:
¾ cup juice, drained from fruit cocktail

Remove from heat. Stir in gelatine until dissolved.

Stir in: **¼ teaspoon salt**

Chill. When mixture begins to thicken, fold in:
1½ cups fruit cocktail drained (#2 can)
¼ cup diced green pepper
¼ cup diced celery

Pour into square pan that has been rinsed in cold water. Chill until firm. When firm, cut in squares in the pan and remove to plate with spatula. Serve on salad greens with mayonnaise or sour cream dressing. Serves 6.

Dessert variation of this recipe

SURPRISE WHIP

Combine softened gelatine with hot fruit juice as before. When mixture begins to thicken, add—and mix 'till blended:
1 cup fruit cocktail, drained
½ cup prunes, soaked and chopped
3 tablespoons peanut butter

Beat until stiff:
2 egg whites

Fold egg whites into peanut butter mixture. Pour into sherbet glasses that have been rinsed in cold water. Chill until firm. When firm, serve plain or with boiled custard made from the two egg yolks. Serves 6.

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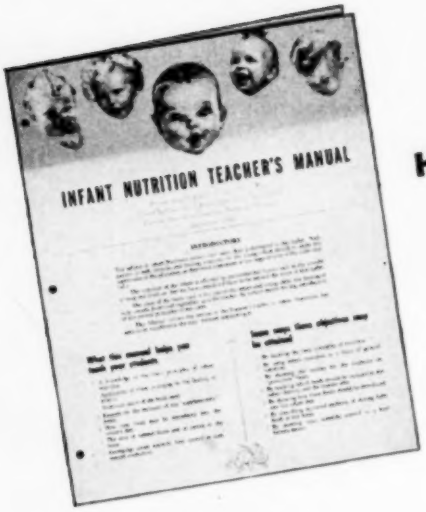

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THE story behind the Picture Cake, used in the Pyrex ware Spring Campaign national ad (shown at the right), was written right in the Home Economics Test Kitchen at Corning.

When it was decided to feature the new Square Cake Dish, the Home Economics Department baked over 50 cakes in developing and testing a simple and appealing recipe.

As a final step, to be sure the recipe was absolutely foolproof and simple, Bob Bush, a Pyrex ware salesman, baked a "Picture Cake". Without any coaching from Helen Martin, Test Kitchen Home Economist, Bob turned out the tasty cake you see in the photograph. So the recipe that will appear nearly 80,000,000 times in March, was given final approval.

Remember, the Home Economics Department at Corning stands ready to help you with your problems, too. The four graduate home economists working in every section of the country, are bubbling over with new ideas about cooking in glass. Just write to Home Economics Department J-2., Consumer Products Division, Corning Glass Works, Corning, N. Y.

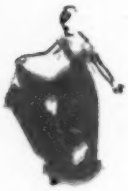
Consumer Products Division

PYREX OVEN WARE for better and faster baking

CORNING GLASS WORKS
CORNING, N. Y.

Clothing classes will welcome this helpful 10-cent book

Trimmings



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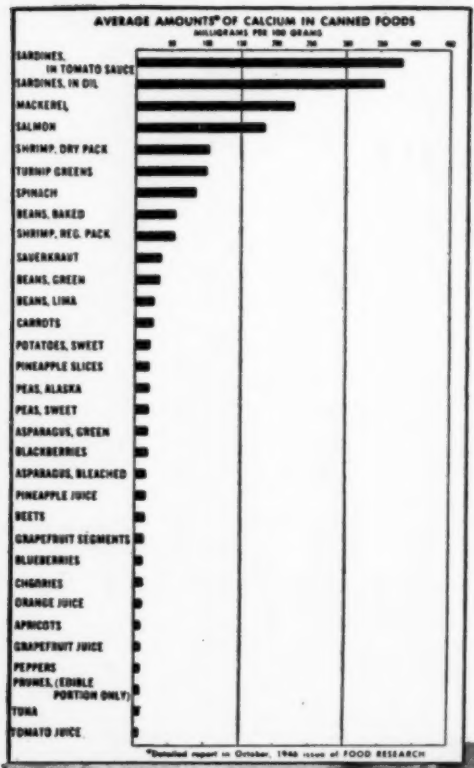

Why are these particular figures significant? Because they are *net* values. As you know, the figures usually quoted in nutrition tables are *gross* figures for raw, uncooked foods. Such figures do not take into consideration nutritional losses which occur in transit from field to market, to kitchen, *and* in home preparation.

The chart on the left gives the average *net*, on-the-table amounts of calcium in the most commonly consumed canned foods.

A series of twelve charts on the actual nutritional values of the most frequently consumed canned foods is now available in booklet form. For your copy, please address: Can Manufacturers Institute, Inc., 60 East 42nd St., New York 17, N. Y. We feel that this down-to-earth type of material can be extremely useful in the hands of the leaders in professional fields. With your support and recommendation, foods packed in cans will win the widespread acceptance they merit—as a truly great source of flavorful, economical nutrition.

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Economic Sense

Appraised by Research

"Because calories produced from animal fat require more land and labor than those derived from vegetable fat, the latter source is a cheaper one. The relative value in the diet of these sources is an important question both economically and physiologically. At the present time there is no physiologic evidence which justifies any generalization that animal fats are nutritionally superior to vegetable fats."

Excerpt from editorial entitled "An Adequate Diet, I: Calories and Fats"—*Journal* of the Medical Society of the State of New York, January 15, 1945.

Confirmed in Daily Living

The Miller children, 1946.
(Front row) Wayne, Twila, Karen Regina.
(Back row) Dolores, Gloria, Dewain.

Mrs. Lloyd Miller, whose six children greet you from the photograph at left, has served Nucoa at her table for thirteen years. "I use six to eight pounds a week, when I can get it," she says. "Nucoa always tastes sweet and fresh and it's so reasonable in cost I needn't be stingy with it. Growing children and men who work hard need plenty of nourishing spread for their bread."

Nutritionists agree with Mrs. Miller. And the Miller children, like millions of others brought up on a "bread 'n' Nucoa" economy, confirm the conclusion of science as to the physiological adequacy of a vegetable fat. Test Nucoa in your own home. Its uniform deliciousness will give you confidence, we believe, in recommending Nucoa for nutritional value at moderate cost.

The chief ingredients of Nucoa, America's foremost margarine, are pure vegetable oils churned with fresh pasteurized skim milk. The first margarine to add Vitamin A, Nucoa was also first to insure today's high fortification of 15,000 U.S.P. units in every pound.

Nutritious NUCOA

NOW WITH 15,000 U.S.P. UNITS OF VITAMIN A

"NUCOA" REG. U. S. PAT. OFF.

Washington News . . .

• **Impetus has been given plans** for that Home for Home Economics by the arrival of the newly appointed secretary of the Permanent Headquarters Fund. Keturah Baldwin has taken up her daily half-day work in the crowded AHEA headquarters. And though she scarcely has elbow room to write you, she does have sufficient space to record your contributions and to read reports of activities from state chairmen or others who answer her call for pledges and information. Write her.

January mails carried a supply of cream and blue leaflets from AHEA headquarters. Within may be found something of our heritage from pioneers, our hopes for achieving fulfillment of our dreams of a permanent headquarters. On the cover is a replica of the Betty Lamp, whose rays become a beacon in the campaign. Enclosed is a card for your contribution or pledge. Use it.

Note the $250,000 questions on page 92.

• **Continuing interest** and participation in the developing affairs of our nation are indicated by appointments of AHEA members to various legislative committees of the Women's Joint Congressional Committee for 1947–48.

Mildred Horton, new AHEA executive secretary, inherits from Lelia Massey chairmanship of the committee on adequate support for the Bureau of Human Nutrition and Home Economics and the Women's Bureau. Mrs. Zelta Rodenwold serves as secretary of the housing committee, on which Mrs. Blanche Lewton also holds membership. Gladys Wyckoff and Mrs. Harrison England hold membership on the committee concerned with federal aid to education. Mrs. Margaret Thompson gives attention to consumer problems. Mrs. Ella McNaughton serves on the social security committee. And Helen Atwater is a member of the international relations committee.

• **May we introduce** the new editorial assistant at AHEA headquarters—Eileen Duddgeon, graduate of Iowa State College in 1945 with a major in experimental cookery and a minor in technical journalism. Her first official act was to send the February issue of *Colhecon* to press.

• **A coast-to-coast radio dramatization** of AHEA's Consumer Speaks project is scheduled for the Consumer Time broadcast originating on WRC (NBC) in Washington, D. C., on February 1, at 12:15 p.m. EST. Consumers will speak about bread and meat in this dramatization. Last month this radio program featured consumers as they spoke about house dresses. The USDA is cooperating with the AHEA consumer interests committee in presenting these progress reports of the nationwide surveys now under way.

• **We hear that** the headquarters of the new national association of consumers will be in Washington and that its support will come from the voluntary membership of individuals in any part of the United States. Among its founders are Helen Hall, head of the Henry Street Settlement of New York City, and Mrs. Chase Going Woodhouse, who during her term as congresswoman acted as co-chairman of a large, informal committee of the House of Representatives on consumer protection.

• **"To reduce the cost of housing** on all fronts and by all desirable methods, we must start as promptly as possible a long-range housing program. . ." said President Truman in his first economic report to Congress on January 8, 1947. He referred to the nonpartisan housing legislation (Wagner-Ellender-Taft bill) introduced in the 79th Congress and passed by the Senate by a large majority, then concluded: "On several occasions, I have urged enactment of this program. . . . I again urge enactment of this program at the earliest possible moment." His attitude is heartening to the AHEA, which has consistently backed this program for reduced cost of decent housing.

Strengthening Our Cornerstone[1]

PEARL P. SWANSON

Dr. Swanson, director of graduate studies in food and nutrition at Iowa State College and assistant director of home economics research at the Iowa Agricultural Experiment Station, holds degrees from Carleton College, the University of Minnesota, and Yale University. She taught at Montana State College and was an Alexander Browne Cox fellow at Yale.

HOME ECONOMICS when viewed from the standpoint of the areas of subject matter which it embraces is an octopus indeed, with tentacles hungrily reaching out in all directions. And, as the feverishly active tentacles of the octopus divert food substances into the parent organism, so do the various areas of home economics pour information into its key structure, THE HOME. Only when home economics gears its objectives toward the needs of that home does it find its subject matter clean-cut, well-defined, and crystal clear. We are all convinced that in the half century of its existence, home economics has appreciated the unique contribution it has to make. Fearlessly it has concerned itself with the problems of the relation of the home to the community; the satisfactions the home may provide to the family living within it, family-wise and community-wise; and the part the home may play in building and maintaining strong bodies and healthy minds.

Early in its history it began to direct its research efforts toward the massing of knowledge for goals it wished to reach. Times were good, needs not too acute, and for years research proceeded at a leisurely rate.

But then came World War II and with it problems never before envisaged—problems that made the home to a greater extent than ever before the focal point of the nation's welfare. Looming large were problems of broken and separated families and of war marriages; problems relating to food, shelter, and clothing; problems introduced by technological advancement; problems concerned with maintenance of the health and morale of civilian groups as well as of the armed forces. Simultaneously with their outcropping, and as a bolt from the blue, came the realization that needed information not only was woefully meager but oftentimes lacking.

In the great need, agencies and areas other than home economics centered their attention on the many problems of the home and the welfare of its inmates. It is not surprising that before long these groups also realized the fertility of the field. So vigorous became their activities that if home economics today is to withstand the impact of the forces operating in areas outside itself, it must define and delineate its field anew and exert every energy to acquire fundamental basic information that the needs of the postwar era demand.

Research at the Crossroads

More than ever, research workers in home economics are challenged. With the many forces and agencies concerning themselves directly with the problems of the home, home economics research stands at the crossroads today. Where it goes from this point on will

[1] Journal Paper No. J-1421 of the Iowa Agricultural Experiment Station, Ames. Project No. 802.

determine, in large measure, the future position of home economics among the humanities.

The home is so generally recognized as the focal point in national well-being that if we, the research workers in home economics, do *not* do the job, someone else *will* do it for us. The time has come to inventory and assess the kinds of problems that need solution and to marshall all of our skills, methodologies, and philosophies. In such marshalling lies the latent strength of home economics.

By virtue of the fact that we are a diverse field, many are the possible areas and angles of attack. If our diversity is seized as an asset, then research studies will begin to provide the kind of information for which home economics is searching. In so doing, research in this field will take on the quality that will bring it distinction and recognition.

Co-ordinate and Unify Studies

May I illustrate with a concrete example. Congress has recently passed legislation providing support for a school lunch program on a national scale. While most of us are convinced that such a program will be reflected in increased national welfare, the necessity and importance of spending the huge sums of money required call for evaluation. Although certain economic aspects are involved, the fundamental objective of the program should be the improvement of the health of the nation's children. Acceptance of that objective, however, does not make the school lunch a problem which the nutritionist *alone* should assume.

How much more would be gained if, in addition to the nutritionist's assessment of any improvement effected in the health of children, investigators in child development simultaneously studied the influence of better feeding on attitudes and mental development of the same children!

Closely related are the problems of preparation, cooking, and serving food under school conditions. Workers in institution management could contribute much, through studies in management and practices, toward providing, on a large-quantity basis, foods not only of high nutritional but of high acceptance value. Ability to meet food needs through lunches that match the food pattern of the community may be the key to success.

But even should we be successful to this point, maximum value from the project has not been obtained. Too well we know that the wealth of nutrition knowledge barely touches the lives of our people. Why in any school providing hot lunches cannot the program that is constantly bringing in information about the nutritional status, the food habits, and the mental development of the children be used as a tool, a device, for impregnating children with the concepts of good nutrition? Here are needed the skills and the studies of the research worker in home economics education. Her help is essential in any attempt to alter undesirable food habits, to make desirable food patterns an integral part of the child's natural way of living, to see that nutrition knowledge obtained in the school percolates into the home. Perhaps home economics education has the hardest task of all to perform in any integrated program. Only when technical findings in research become part and parcel of the life of the family group shall the true values from home economics research be realized.

Certainly the greatest hope for a well-nourished nation tomorrow is a well-informed, thoroughly convinced child of today. The chance that research relating to the school lunch program offers us to demonstrate what home economics research can be, makes one tingle with excitement and anticipation. It is only one example but indicates one way in which we might proceed to make our work more real and vital. So first of all, I speak for co-ordination and unification of studies in home economics. Focusing upon a common objective will not only decrease the cost of research but will build for a stronger program, with satisfactions accruing that come from working together.

Programs of research of the future should be distinguished by other basic characteristics.

In planning, the first task undoubtedly is one of job analysis. What contribution can any one discipline make to the sum total of knowledge? Many of the areas in home economics are relatively new, relatively unexplored, and it is often difficult to see where research is leading.

Research in nutrition, as such, is older than that in any other area of home economics. From it, we can learn much. May I use nutrition as an example to show how extensive a field of knowledge may become if only its basic structural unit can be identified and isolated. May we think of nutrition as a wheel, phases of its knowledge as its spokes, radiating from the key structural unit, the hub. It was only when the hub was defined that it was possible to build the wheel, which has become the science of nutrition.

Research in nutrition had reached a standstill, more or less, at the beginning of the twentieth century. Knowledge was vague and unsatisfactory. Only when the essential food nutrients, other than carbohydrates, fats, protein, and minerals, were discovered and described, did nutrition receive the impetus toward the tremendous advance made during the last three decades. And why? Because the hub on which all other information revolved, had been found. For example, curiosity as to what foods might be relied upon to provide these nutrients called for studies of the distribution of the nutrients in food materials. And before long, investigations showed that over and beyond inherent variability many factors affected food value. As a logical next step, studies developed pertaining to the effect of environment, soil conditions, marketing, storage, processing, and cooking on nutritive values. No matter how rich a source of any nutrient a laboratory analysis may indicate a particular food to be, it is of no nutritional worth if the animal body cannot liberate and utilize that nutrient. By ingenious adaptation of advances in methodology, investigations today are providing information in this phase in such proportions that the old food composition table is becoming a truly vital thing. Research in food composition is no longer a spotty, erratic series of studies; it is taking on the aspects of a *program* of research.

Now may we follow other spokes of the nutrition wheel. Then the whole subject matter of nutrition will spread out before us. It has been easy to pass from studies identifying the essential food nutrients to subjects which today encompass the science of nutrition, namely:

(1) Functional roles of the essential nutrients in the maintenance of life processes.

(2) Needs for optimal nutrition under all conditions of living at all periods of life history.

(3) Demonstration of the reality of deficiency diseases and their description in terms of biochemical, physiological, and histological lesions.

(4) Laboratory techniques for the analysis of foods, tissues, excretions, and body fluids.

(5) Assessment of the nutritional status of human beings at critical intervals in their life history and dietary needs.

(6) Metabolic pathways of the various nutrients in healthy and in undernourished persons.

(7) Interrelations of food nutrients of the diet in the metabolism of normal and undernourished individuals.

(8) Relation of microscopic flora and fauna of the alimentary tract to the essential food nutrients and needs thereof.

(9) Effect of environmental conditions on body needs.

(10) Food habits and acceptability of foods.

Fundamentals Difficult to Identify

It is more difficult for the newer disciplines to find the fundamental unit that will spearhead natural development. Nutrition workers looked for it for long weary years. Investigators in areas other than nutrition are keenly aware of the problem, I know.

A little earlier, the science of nutrition was defined. The wheel represented the "general overall science." In the general picture are certain parts that the nutritionist in home

economics is especially well adapted to study. There are other parts that can be attacked more effectively by the biochemist, the physiologist, the bacteriologist, or the medical man.

No matter what our major interest, the problems we can legitimately attack are those that relate to people and to family life. In this business of job analysis, the portion that relates thus must be clearly differentiated. Studies in the area of housing illustrate exactly what I mean.

Functional Research Needed

Problems pertaining to the house are of four specific kinds. These may be designated as those relating to its financing, its construction, its adaptability to the needs of the family, and finally, to legislation affecting it. So broad is the subject of housing that no one field of knowledge can provide all the necessary information. For example, the economist sees the problems involved in the financing of the home; but only the construction engineer, the sanitary engineer, and specialists in architecture and landscaping can meet the problems of the final planning, construction, placing, and beautifying of the home.

The home economist on the other hand finds her place among the disciplines that have to do with the interpretation of a functional home, a house that makes provision for all of the activities in the household in the most satisfying, time-saving, and energy-saving manner possible—a house that provides aesthetic satisfaction and permits development of body, mind, and spirit. It is the job of the home economist to provide the architect with the specifications he must have in order to plan a house that meets all the needs of the family. It speaks well for the scope of home economics when it can provide this information through four of its own organized channels: child development, household equipment, home management, and applied art. Each has its contribution to make. For instance what are the arrangements that mean efficiency in terms of human effort; in terms of a reduction in the mental and physical wear and tear that result from household activities that must be carried on simultaneously; in terms of those arrangements conducive to efficient home production and to the health, physical development, social needs, and mental satisfactions of each member of the family. And how ignorant we are! Many houses are being planned that fail entirely to take into account the functional aspects. Many decisions in planning houses have been based and are being based on opinion only. As a result of this thinking, it seems that specifications become the hub of the housing problem for home economics. The first step in setting up these specifications is finding out how families live, what use they make of the resources of the homes they have.

Later, physiological effects assayed in terms of fatigue, energy expended, and other vital constants may well become the basis for the specifications the home management research worker should provide the agricultural engineer. Height of tables, ironing surfaces, and other work equipment illustrate this point. Evaluation in terms of objective measurement is needed as to number and arrangement of rooms and as to spaces within rooms. Studies of this kind, furthermore, must meet the requirements of families of varying sizes, representing different regional, economic, and occupational groups. The problem is so large that oftentimes it nearly seems incapable of solution.

It is encouraging to learn that workers in housing have the bravery and foresight to plan projects geared to obtaining basic information. For example, from hundreds of sets of kitchen utensils placed in as many homes for functional evaluation, the Bureau of Human Nutrition and Home Economics will set up the specifications for minimal but satisfactory cupboard spaces for the storage of kitchen equipment. The first step only, true enough, in the development of a functional kitchen—but, without doubt, a necessary first step. The manufacturer is watching progress of such experiments with interest. "Why,"

he says, "must we manufacture 50 modifications of a piece of equipment used for a specific purpose when one well-designed piece, if it meets the approval of the homemaker, can be made at much lower cost?" This is to me the story not of pots and pans but of functional research.

Seeing developments of this kind in all areas of home economics is one of the healthiest signs of the times. In household equipment, kitchen and laundry appliances are being evaluated in terms of their functional requirements, the ultimate goal being a product designed to do the job for the consumer at a reasonable cost. Progress in this field is related to the exact description of what the functional requirement is. For example, the quick-freeze unit defeats its own purpose if foods held in it become unpalatable or lose important food nutrients in the holding process. Determination of the temperature required for the retention of palatability and nutritive value of foods becomes a determination of the functional requirement. Such analysis represents not only a reasonable basis for the design of equipment but for the establishment of specifications manufacturers should meet. From this point, agricultural engineers and *household* engineers working together can set up the specifications for the manufacture of a satisfactory unit, and later, with the manufacturer, develop procedures for testing operating performance. In view of this kind of research I am not sure but that *household engineering* might not be a better name than *household equipment* for this area of home economics endeavor.

Research Must Be Useful

In textiles and clothing, a similar development has taken place. Recently I had the pleasure of observing the work of the Bureau of Human Nutrition and Home Economics. Ruth O'Brien described the studies in progress in textiles and clothing. I heard her outline not one but several comprehensive programs of study. As she described one phase of their program, I saw "physical and chemical characteristics of fibers and fabrics" forming the hub of a wheel that has to do with the solution of problems relating to the selection, use, and care of clothing and household textiles. Radiating as spokes of the wheel were studies of the usefulness of various raw fibers and yarn in the manufacture of fabrics needed by the consumer; studies of fibers that led to specifications for the manufacture of blankets, towels, sheets, and corduroys; studies relating to the basic qualities and properties of textile materials and changes wrought in them by changes in the composition of the structural fibers or in the construction of the fabric; studies relating to deterioration of fabrics showing what happens chemically when a fabric wears out, what makes it deteriorate, and how to slow down the wearing-out process. Then the people at the Bureau again made me realize that it is not enough to mass information; if research in home economics is to meet the final criterion, it must become useful in the lives of people. As evidence of the Bureau's endeavor to make its research programs functional, there are some 35 or 40 publications on my desk relating to the program, *use and care of clothing and household textiles.*

Many other examples of active research programs might be cited to describe the turn that research in home economics is taking. If we take cognizance of each of the four points I have tried to make we can contribute and provide subject matter that will give to home economics the place that it should hold in our national life. May I encourage each research worker in home economics (1) to clearly define the portion of the problem that is specifically hers in any field, (2) to establish her research program on a basic unit that will lead naturally to the development and unfolding of many segments of information, (3) to plan programs and not projects only and, whenever possible, utilize the skills and techniques of several specialities, and (4) to keep home economics research of a functional character in the continuous improvement of home and family life.

Functional Kitchen Storage in Terms of Body Economy

MARY KOLL HEINER

Mrs. Heiner is a member of the research staff of the department of economics of the household and household management at the New York State College of Home Economics, Cornell University.

GREAT progress has been made in the improved design of kitchens during the past 25 years, but little basic research has been done to offer sound reason for some of the trends found in the kitchens of today. The reduction of needless waste in walking and in time, resulting from storage cabinets functionally placed within the kitchen as compared with the remote pantry of a generation ago, is beyond argument. Standardization of these storage units in the interest of lowered price is justifiable since custom building to meet the needs of the individual is costly whether for coats or for cabinets. But the body economy of the woman who uses the kitchen seems to have been almost completely overlooked in most of the designs offered today for kitchen storage.

In industry, changed design of the work place to conform with a man's maximum and normal reach has been demonstrated effectively to decrease needless fatigue and to increase output. It would seem plausible to expect similar advantages to apply to the design of the major work places for the woman in the kitchen.

This report summarizes the first stage of the investigation to establish functional kitchen design. More is required to make a kitchen functional than continuous counters and overhead cabinets or even the multiplicity of shelves within a cabinet. The work curves of women point to the need of a new concept of a cabinet in terms of over-all heights and depths. The principles of work simplification show a need for more functional shelving heights and depths and for more readily accessible arrangements. The problems of an aging population indicate the need for less stooping and reaching and for better visability. These aspects are equally important in youth. Age merely accentuates the problems.

The cabinets recommended in this study were designed to capitalize on the least wasteful use of space as shown by the use of work curves for women. That the area of greatest body economy, the elbow circle or the normal work curve, coincides with the space now given to counter tops, indicates the need for new designs. New values on the time uses of women and on the space uses within dwellings give further evidence of this need. The program revolves about the three following recommendations: (1) Build the shelves to fit the supplies in active storage today; (2) build the cabinets to fit the woman or the majority, if cabinets are factory built; (3) build the kitchen to fit family-life needs.

The problem of establishing a valid and reliable inventory to develop and test principles of functional design led to the formulation of the lists of representative equipment and supplies. The present day requirements of the average urban family of four members in the $2000 to $3000 income bracket set the pattern.[1] The resulting inventory of almost 600 items is offered as an aid to other research workers who may be confronted with a similar need. It is not presumed that these lists are ideal nor that they will be satisfactory equally in all sections of the country. They may serve, however, as a

[1] Based on the Study of Consumer Purchases, Family Expenditures in Selected Cities 1935–36, Volume V, Food, Bull. No. 648, U. S. Dept. of Labor, supplemented by local investigations.

starting point for other studies on various aspects of design within the kitchen or for other kitchen inventories. The lists represent optimum rather than minimum needs. This inventory applies particularly to the north central and eastern areas of the country.

Three Goals Used as Checks

How to reduce needless walking, lifting, and rehandling of supplies determines the three goals used as checks in the allocation of items and in cabinet construction: Storage in terms of first use, clear visibility, easy accessibility.

Functional storage in terms of first use was met by placing all supplies and utensils used first with water at the sink area, those used first with heat at the range. This allocation discards traditional methods of storing objects together by type rather than by use. Space was conserved and walking reduced by combining mix center supplies and utensils with those used first at the sink; serving supplies and utensils with those used first at the range.

Clear visibility and quick accessibility were achieved by storage one row deep and through adaptations of traditional methods to gain this end. Among these are adjustable shallow and cut-back shelves with complimenting shallow shelves and racks on the doors; vertical, horizontal, and slanting files; combinations of these with counterbalanced drop-out bins, pull-out shelves, and pull-out panels. New developments include a compact swing-storage cabinet and a unit giving two-way storage between the kitchen and dining room.

At least three alternative storage methods are offered for the 175 packaged supplies, the 105 utensils and tools, and the 300 items of china and glassware used to represent the storage demands of the type family selected. Active storage space would be required in the kitchen for only 95 items of china and glassware. The remaining 200 pieces represent items occasionally used. Space need not be planned for these in the kitchen proper.

After allocation was made to the center of first use, items were placed within the work curve limits of the average woman (5 feet, 3 inches to 5 feet, 5 inches in height) in terms of frequency of use and by weight. Frequently used, heavy, or large size packages, utensils, and china were stored as nearly as possible at counter level. This would put the most used items within comfortable elbow reach and would reduce needless shoulder lifting and needless fatigue. Lightweight and less frequently used items were distributed above and below the *normal* work curve or the radius of the elbow circle. The structural limits of the cabinets would keep all items within the *maximum* work curve limits or the radius of shoulder to curved finger tip grasp. The resulting devices show many departures from conventional kitchen cabinets.

Recommendations for structural dimensions are given in the three individual measures rather than in the usual cubic dimensions which so often have failed to meet functional needs in use. The findings point to the need to keep work center dimensions well within a woman's maximum side to side reach from shoulder to bent finger tips, or 48 inches in width; not to exceed the elbow to finger-tip normal work curve or 16 inches in depth; and to place the top shelf within the maximum shoulder to bent finger tip grasp, at most 72 inches from the floor. (When construction involved a counter top, as for sink and mix cabinet units, a depth of 20 inches was used to provide spreading or holding space. All other depths are far under the indicated 16-inch limit.) Tests have shown this to be an easy reach for the average woman of 5 feet, 4 inches in height. Supplies from this top unobstructed shelf can be reached by a woman of less than 5 feet in height and by some children as young as 10 years of age. These limits were used in all inside measurements of the devices studied. A uniform outside height of 78 inches was used in final construction.

Widths. A significant construction item discovered in this study of dimensions for kitchen storage was the ready adjustment

of articles to the 4-inch module. This was true both for packaged supplies and for the utensils and china used at each work center.

The most useful widths (inside dimensions) for storage units were found to be:

Utensil storage at the range	16 inches
Packaged supplies, all types	24 and 36 inches
Utensil storage at the sink	24 and 28 inches
China and glassware	20, 24, and 36 inches

Depths. The greatest contribution to body economy of the worker can be made through shallower depths of shelves and of cabinets. The outer limit in depth in each case was set by the largest item to be stored at the center. Space- and effort-saving adaptations were developed for the placement of small items. Dinner plates, for instance, are the only items that require even an 11-inch shelf. All the other items except platters can be stored on 8- and 6-inch shelves.

Storage one row deep indicated shelves cut functionally shallow to fit the supplies stored. This requires two or even three times more shelves than with traditional storage. Little or no increase in wall space is required, because use is made of such devices as door storage, swing cabinets, and the storage wall. The extent to which fatigue is reduced is not known at this time. It is known that needless rehandling of supplies, picking up, and shifting can be decreased. The assumption is evident that breakage and temper can be reduced by this method of shelf arrangement.

Storage one row deep on shelves and one layer deep in drawers is used for all packaged supplies, utensils, and china of different size and shape. Storage two rows deep is used only for supplies of canned food or for china and glassware of identical form such as cups and tumblers. Storage three rows deep is recommended only for the occasionally used items of identical size and shape. These would not come under the specification of active storage and as such would not be considered in the kitchen proper.

Recommended shelf depths (inside dimensions) for clear visibility and quick accessibility are:

Utensil storage at the range	14 and 16 inches
Utensil storage at the sink	16 and 18 inches
China and glassware storage	6, 8, and 12 inches (with 3-inch door storage)
Packaged supplies	4 and 6 inches (with 2- and 3-inch door storage)

Heights. Accepted standards for heights proved to be less satisfactory than those for width and depth, according to these tests. Both total storage space and easy accessibility can be increased when margins are reduced to a functional minimum.

The recommendations for heights do not fit into the precise patterns suggested for width and depth. They unquestionably point to the need for adjustable shelving arrangements if the goals, clear visibility and easy accessibility, are to be achieved.

The question of functional stacking of utensils and dishes needs to be cleared up in this connection. Items of identical size and shape used in numbers, such as cups by two's, saucers and plates of a size, can be stacked and still meet the requirements of easy accessibility. Articles of graded size or those used singly, such as platters, bowls, saucepans, skillets and covers, if stacked, require wasteful and frustrating rehandling in order to reach the desired item. Where variations in size and shape exist, shelves should be of a functional depth to store the objects and should be adjustable for height. In this way the needless lifting, reaching over, and rehandling of supplies can be avoided.

In short, form of the article stored and the woman's work curve limits create functional widths, depths, and heights of storage units. Ultimately it is hoped that methods can be developed for testing the biomechanics aspects of the design of kitchen equipment. This would include questions of muscle tension, strain, and other phases of body mechanics tested objectively. These factors may have a significant effect on the health of the woman and upon the harmony of family life.

A Nine-Year Study of the School Lunch

PAULINE BEERY MACK

Dr. Mack has been director of the Ellen H. Richards Institute since its establishment at The Pennsylvania State College in 1941. Long the director of research in the field of textiles and textile chemistry at the College, Dr. Mack in more recent years has also directed the research in human nutrition that has been carried on at the Institute.

BECAUSE the physical well-being which results from good nutrition is a requisite for realizing one's full capacities for accomplishment and happiness, the school lunch can constitute a great force for democracy by providing the means for every child to develop his potentialities, both physically and intellectually. To accomplish this end, however, the school feeding program must be planned and administered by persons qualified to judge the well-being of the child as the ultimate criterion of the success or failure of the undertaking.

The mere act of providing a school lunch is of small benefit unless the lunch is planned carefully on a day-by-day basis by those who are trained in nutrition and dietetics and are familiar with the home dietaries of the children being fed. The food provided at home and that received at school should, ideally, complement each other so that the two together constitute an adequate dietary.

Among more than 200 typical school lunches observed and computed as to nutrient content by the author and associates, none was found which met the objective of compensating fully for omissions in the home dietaries of the great majority of the children to whom they were fed; and more than one-half failed to provide daily even one-third—or one meal's quota—of the energy and the major currently calculated nutrient allowances recommended by the food and nutrition board of the National Research Council for the sex and age composition of the respective groups of children.

Since the ultimate measure of success of a school feeding program is the physical condition of the children themselves, let us see how much improvement has been effected in different types of school lunch programs in which the children have been observed and measured in the Pennsylvania mass studies in human nutrition. These studies were begun in 1935 for the purpose of observing food habits and consequent nutritional status of a large number of persons of different sexes and ages, with different economic and racial-national backgrounds. For the past nine years, children participating in different types of school-feeding plans have been included in the study and have been observed and tested at intervals in order to estimate the value of the food provided at school in improving physical well-being.

These tests for evaluating nutritional status have included: medical examination; medical history; dental examination; X-rays of certain bones of the body to assess skeletal maturity and degree of mineralization; X-rays of the teeth to ascertain structure and the presence of dental decay not observable from the clinical examination; observation of the eye, skin, gums, and tongue by means of a biomicroscope in order to find the condition of certain soft tissues; hematological values—hemoglobin, red cell count, packed cell volume, white cell count, and differential cell count; concentration in the blood stream of protein, of albumin, of phosphatase (an enzyme related to bone formation), of vitamin A, of carotene, of ascorbic acid, and of vitamin E; urine values for certain of the B-vitamins; tests on saliva for its solubilizing effect on dental enamel, for its starch-digesting activity, and for its bacterial

counts; and such functional tests as those for heart action, reflexes, dark adaptation, and fatigue.

Results of Pennsylvania Studies

The results of the school lunch phases of the Pennsylvania studies may be summarized briefly as follows. The only children who have shown marked improvement in many of the tests outlined, following their participation for a number of months in a school lunch program, have been those whose school feeding regimen met the two following specifications:

1. Someone trained in nutrition and dietetics planned the lunches on the basis of careful calculations; and
2. The children's home dietaries were studied by one means or another, and the school lunch menus were designed to complement the meals received at home, at least in major part.

Let us take a specific case of a child 11 years of age whom we shall call Margaret. For four years Margaret, a child from a low-income family, attended a school which served a lunch. Because she was regarded as considerably undernourished, she was transferred, upon the advice of the school physician, from her own school district where there was no school lunch to one in which a lunch together with mid-morning and midafternoon feedings were given.

At the beginning and close of her third and fourth years of school lunch, Margaret was tested in the laboratories of the Pennsylvania mass nutrition studies.

Margaret's initial tests revealed that she was about 16 per cent underweight for her sex, age, and body build and somewhat shorter for her age than well-fed children of the same racial-national background. Her X-rays showed that her skeleton was not so mature as that of well-nourished girls of the same chronological age and that it was decidedly low in mineral density. Her teeth were not particularly different from those of the majority of American children (which generally are poor); exhibited numerous decayed areas, some filled and some not; and were not so straight as desirable.

The medical and biomicroscopic examinations showed that she had gums which bled easily, with pitting and inflammation in certain regions; a tongue which was distinctly grooved and inflamed in some areas; a skin which was rough and dry, with small swellings at the base of the hair follicles in some areas; and eyes in which the conjunctiva (covering of the eyeball) was not transparent, as it should be in ideal nutrition, but translucent and even opaque in many regions. The circulatory system of the eye showed a minor degree of corneal invasion, or penetration of capillary loops into the cornea—a condition accountable at least in part to poor nutrition.

Margaret's heart action was not optimum; her reflexes were sluggish; she was easily fatigued; and her dark adaptation (ability to see after exposure to bright light and subsequent return to semi-darkness) was poor.

The blood and urine tests told the same story. Their concentration of protein and of certain of the vitamins was lower than seems desirable in good nutrition. Although Margaret basically was an attractive child, her physical status prevented her from making a good record at school or enjoying play with well-fed children of her own age.

The following is a general description of the feeding program at Margaret's school: (1) a midmorning small bowl of cereal and milk; (2) a lunch consisting usually of sandwiches, soup, and a small glass of milk, with sometimes a meat substitute, such as macaroni, but rarely any meat except a small fragment in meat stew, and, once in a while, a four-ounce glass of fruit juice or a small serving of fruit; and (3) a midafternoon snack of small portions of crackers and milk.

Upon calculation it was found that, over a representative period, the food received at school provided 29 per cent of the energy and from 6 to 53 per cent of the amounts of the different major nutrients recommended for children of the sex and age composition represented by the group. The meals were in error

in what they omitted rather than in what they provided.

Margaret gave even poorer responses to the nutrition tests at the end of each of the two years during which observations and tests were made than she did at the beginning of either of these school years.

Among the group of 144 children in Margaret's group who were tested during one of these school years, and who participated in the same school lunch program, weight for the sex, age, height, and body build (Pryor standards) became proportionately less in 20 per cent of the cases. Skeletal status remained about the same (with respect to sex and age) in 70.3 per cent, improved in 19.5, and became poorer in 10.2 per cent of the children. The biomicroscope showed that the conjunctiva became progressively more translucent or opaque in 72.6 per cent and that corneal vascularization advanced to a greater degree in 41.7 per cent of the children. The gums, which generally showed inflammation to a greater or lesser degree, remained about the same in 60.0 per cent of the cases, showed improvement in 22.4, and exhibited an increased degree of inflammation in 17.6 per cent of the subjects. Lesions of the tongue remained in about the same state in 57.6 per cent of the cases, with about an equal number of the remainder becoming better and poorer.

Hemoglobin values, initially inclined to be low, remained about the same in 55.8 per cent of the cases, showed improvement in 11.8 per cent, and exhibited a decrease in 32.4 per cent of the children. In all other blood and urine values, the number of children who remained about the same or who became poorer far exceeded those who showed improvement.

Dark adaptation, which showed one of the poorest initial responses, was the only test in which the reverse was true. Other functional tests showed no change or a slightly poorer final value.

The cost of the school feeding program in question was as great as or greater than others in which careful planning and buying provided foods which met the children's needs.

Reason for Poor Results

The chief reasons for the results obtained with this particular school lunch group were:

1. Unskilled and untrained persons were in charge of the planning and preparation of the school lunch; hence no effort was made to select and prepare foods in a manner which would compensate for the children's poor home dietaries; actually, the caloric content and the content of most of the nutrients received at school were less than the children would have eaten had they taken all of their meals at home.
2. Those responsible for the children's home dietaries paid even less attention to this problem after the children had been included in a child-feeding program because of their confidence in the adequacy of the latter.

Two Main Factors Influence Adequacy

The Pennsylvania school lunch studies have shown that almost all children, regardless of economic background, would profit from a well-planned school lunch, although the need for it becomes progressively more acute as family income decreases. As a matter of fact, education of the adults in a family, coupled with the family economic status—with which it is closely correlated—constitute the two factors most closely related to the adequacy of a child's home dietary. Even those children in better economic status, however, have been found to profit by a well-supervised school lunch, both because the calculation of home dietaries even by dietetics-trained mothers is very rare and because children in school lunch groups frequently do not display the antipathies toward certain foods which they exhibit in the home circle, where they too frequently are the object of undue attention.

Because the economic status of the family is an important factor in determining the adequacy of a child's home dietary, this should be considered in planning the school lunch for a group or in determining portion sizes and special servings to be given to individual children who may be below the majority of the children in the school lunch group in economic

status. Lowther, Mack, Logan, O'Brien, Smith, Sprague, Shaw, and Dodds[1] have published a table showing the average number of calories and the major nutrients provided by the combined morning and evening meals of the children at five economic levels, together with the quantity of each of these which must be provided by the school lunch to bring the child's dietary to the recommended level. This table, based on a group of children representing many racial-national backgrounds, can be used as a basis for planning or as a means of checking the results of a survey of home diets of a special group.

Recommended Procedures

The Pennsylvania studies show that, to meet the needs of the great majority of a heterogeneous group of children representing many income levels, food provided at school must contain about one-half of the energy, protein, phosphorus, and iron; two-thirds of the calcium; and from one-half to four-fifths of the major vitamins except vitamin D, with nine-tenths of the latter. A satisfactory procedure for planning the school lunch so that it will complement home dietaries is:

1. Ascertain what the individual children are eating at home either through home visiting or by asking the children at frequent intervals to write out what they ate the night before and the same morning, as well as between meals.
2. Provide lunches which will furnish the energy, protein, minerals, and vitamins needed by the majority of children so that the sum of the home and school food will meet the allowances recommended by the food and nutrition board of the National Research Council.
3. Give larger portions and second servings to those whose home intakes fall below the majority of the group. This should be done quietly without calling attention to an individual child.
4. Undertake close co-operation with the school's medical and nursing service if one exists. A markedly undernourished child requires more of certain nutrients than the recommendations for children in general.
5. Use untrained personnel only for manual duties. The planning of the dietaries and the supervision of the cooking procedures should be placed exclusively in the hands of trained persons familiar with the objectives of the program.

The Pennsylvania school lunch studies have shown repeatedly the fallacy of placing untrained personnel in charge of a school-feeding program, where results are left to chance and are therefore haphazard. A case in point is that of a neighborhood school attended exclusively by one foreign racial group. Results of the initial calculations and medical examinations and nutrition tests showed that the children were receiving a dietary comparatively high in carbohydrate but low in all other currently considered nutrients, and that they were very poorly nourished in most respects. The report resulted in the introduction of a lunch program into the school. Instead of eliciting the aid of those trained in this field, however, a volunteer committee of mothers was placed in charge of the school feeding regimen. Consequently, the food served was the same as that fed at home. Considerable temporary neighborhood interest was aroused in the school lunch program but no benefit accrued to the physical well-being of the children.

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[1] See "The School Lunch as a Supplement to the Home Diet of Grade School Children," by M. E. Lowther, P. B. Mack, C. H. Logan, A. T. O'Brien, J. M. Smith, and P. K. Sprague of The Pennsylvania State College, in co-operation with J. J. Shaw, MD, and Paul Dodds, MD, of the Bureau of Maternal and Child Health, The Commonwealth of Pennsylvania. *Child Development* **11**, (Sept. 1940), pp. 203–247.

The author is grateful to H. W. Weest, MD, secretary of health, Paul Dodds, MD, director of the Bureau of Maternal and Child Health, and Anna de Planter Bowes, chief of the division of nutrition, all of the Department of Health, Commonwealth of Pennsylvania, for sponsorship of the studies on which this report is based. Thanks are due also to colleagues in the Ellen H. Richards Institute who carried on laboratory studies and home interviews.

The Assertive Behavior of Children as Related to Parent Behavior

CHARLENE TRUMBO MEYER

Mrs. Meyer, who lives with her husband and infant son in Chariton, Iowa, performed the research reported to satisfy the requirements for her master's degree, which she received from Iowa State College in 1945.

THE hypothesis that there is a relationship between the behavior of parents toward their child and the behavior of that child towards members of his own age group was tested in this investigation.

The subjects were 15 boys and 14 girls ranging in chronological age from 3 years, 4 months to 5 years, 2 months with a mean of 4 years, 0.8 months. They were enrolled in the Iowa State College nursery school.

Parent-child behavior was rated on the Fels Parent Behavior Rating Scales, consisting of 30 observable variables of parent behavior. Each home was rated after a visit of one to two hours. To determine the reliability of the rater, two persons rated each of seven homes independently. The average of the correlations between the two persons was 0.855, indicating a fairly high degree of consistency.

An assertiveness score for each of the 29 subjects was obtained by using Chittenden's test. Assertiveness was defined by Chittenden as (1) any overt attempt to influence the behavior of another and (2) any overt response to the above behavior so long as the child responding maintained his status in the situation. Conversely, nonassertive behavior included(1) no attempt to influence the behavior of another, and (2) immediate compliance with another's efforts to influence one's behavior with loss of status of the one complying.

Assertive behavior was broken down into two general types: (1) dominative behavior, characterized by direct force, either physical or verbal, applied to another person or his possessions in an attempt to influence him or withstand his influence; and (2) co-operative behavior, characterized by an indirect, nonforceful attempt to influence another or withstand his influence, with obvious recognition of his status in the situation.

A domination-co-operation index was found by using the following formula:

$$\frac{\text{Total domination score}}{\text{Total co-operation score}} \times 10$$

where the numerator is the total number of dominative responses in five 5-minute test situations where two children were given only one toy to use and the denominator is the total number of co-operative responses in the five test situations.

In order to determine the relation between assertive behavior and parent-child behavior, Pearson product-moment correlation coefficients were computed. The results appear in the table.

An examination of the table shows that correlations between the test scores and each of the following eight variables were significant at the 1 per cent level: effectiveness of policy, rapport with child, understanding the child's problems, disciplinary friction, readiness of criticism, democracy of policy, readiness of explanation, and intensity of contact.

Seven additional variables correlated significantly at the 5 per cent level with the test indices, namely: acceptance of the child, discord in the home, restrictiveness of regulations, clarity of policy, justification of policy, emotionality toward child, and coerciveness of suggestion.

It is interesting to note that there were five coefficients of correlation of 0.105 and below:

activeness of the home, child-centeredness of the home, favorableness of criticism, co-ordination of the household, and sociability of the family.

*Correlations between domination–co-operation indices and rating scale variables**

VARIABLE	COEFFICIENT OF CORRELATION (r)
1. Effectiveness of policy	−0.648
2. Rapport with child	−0.615
3. Understanding of child's problems	−0.592
4. Disciplinary friction	0.573
5. Readiness of criticism	−0.560
6. Democracy of policy	−0.520
7. Readiness of explanation	−0.495
8. Intensity of contact	−0.489
9. Acceptance of child	−0.468
10. Discord in home	0.414
11. Restrictiveness of regulations	0.403
12. Clarity of policy	−0.391
13. Justification of policy	−0.389
14. Emotionality toward child	−0.382
15. Coerciveness of suggestion	0.377
16. Accelerational attempt	−0.345
17. Readiness of enforcement	0.342
18. Adjustment of home	−0.331
19. Solicitousness for child's welfare	−0.314
20. Protectiveness	−0.270
21. Babying	−0.262
22. Affectionateness toward child	0.260
23. Duration of contact with parent	−0.181
24. Readiness of suggestion	−0.172
25. Severity of actual penalties	0.136
26. Activeness of home	−0.105
27. Child-centeredness of home	−0.102
28. Favorableness of criticism	−0.082
29. Co-ordination of household	0.022
30. Sociability of family	−0.009

* For a sample of 29 cases correlations of 0.471 and above are significant at the 1 per cent level and those of 0.367 and above at the 5 per cent level.

To make these findings more meaningful to parents and other individuals working with children, a detailed discussion follows.

Effectiveness of policy was the most highly related variable to the domination-co-operation index. This variable refers to the degree to which the child's conduct meets the standards set by the parent; i.e., in the eyes of the parent, is the child well behaved or does he fail to meet the requirements implied in the parent's control policy? A coefficient of −0.648 indicates that children who are failing to meet the requirements set up by their parents are likely to show more dominative behavior in their own social group than are the children who are "satisfying" their parents.

The closeness of the relationship between parent and child is referred to as *rapport.* It includes mutual understanding, sympathy, confidence, and sharing of aspirations, intimate thoughts, and feelings. This variable is also negatively correlated to the index with an r of −0.615, showing that lack of rapport is rather highly related to a child's display of dominative behavior.

Understanding a child's problems is more tangible than the previous two variables. It includes the parent's understanding of the child's abilities, needs, and points of view. It includes insight, foresight, and child sympathy. The −0.592 correlation value shows that children of understanding parents are less likely to show dominative behavior than children of parents who do not understand their problems.

Disciplinary friction is also easily understood. The writer believes it is a variable that could be expected to be highly related to the domination-co-operation index. It is the only variable positively related (r = 0.573) within the group significant at the 1 per cent level. This indicates that there is likely to be an increase in dominative behavior as the amount of friction over disciplinary measures increases in the home. This variable refers to the amount of overt parent-child conflict over the enforcement of regulations and requests. Is the relationship between parent and child characterized by continuous wrangling, resistance, and rebellion in regard to child conduct? Or is discipline characterized by harmonious co-ordination, without bickering, threats, refusals, and penalties? In other words, how much disharmony occurs as part of the parent's attempt to control the child's conduct, both in enforcing routine standards and in making immediate suggestions?

Readiness of criticism means the parent's tendency to express an approval-disapproval attitude toward the child's behavior. It includes the expression of criticism, verbal, gestural, or facial as well as the expression of approval. A negative relationship is shown by a coefficient correlation of −0.560, indicating that amount of dominative behavior may increase with a decrease in the child's knowledge of what his parent thinks of his behavior.

The parent's tendency to share with the child the formulation of regulations for the child's conduct is referred to as *democracy of policy*. Does the parent give the child a voice in determining what the policy shall be, or does the parent hand down the established policy from above? A coefficient of correlation of −0.520 supports the rather common belief that, if a child has an opportunity to share in planning the policies to be followed, he is less likely to show dominative behavior.

Readiness of explanation is a variable describing the parent's tendency to satisfy the child's intellectual curiosity. It includes the parent's willingness to respond to "Why?" and "How?" questions of the child, regardless of the accuracy or detail of the response. The negative relationship shown by a −0.495 correlation coefficient indicates that the child whose parents answer his questions readily is less likely to show domination than the child whose parents do not satisfy his curiosity.

Intensity of contact is the eighth and last variable which correlates significantly at the 1 per cent level. It is the reactivity of the parent during contacts with the child. "Reactivity" includes both initiating social intercourse with the child and responding to the child's initiation. It includes attention, suggestion, affection, coercion, help, conversation, criticism, information, play, scolding, threatening, feeding, and explaining. The r value of −0.489 indicates that if a parent's contacts are high in reactivity the child is likely to show less dominative behavior.

As has been pointed out before, acceptance of the child, discord in the home, restrictiveness of regulations, clarity of policy, justification of policy, emotionality toward child, and coerciveness of suggestion are also highly related to dominative behavior, showing significance at the 5 per cent level. *Acceptance of the child* refers to the parent's allowing the child to enter into his own inner circle of loyalty and devotion. It is not a rating of the parent's true feeling but of his attitude as revealed in the child's environment. *Discord in the home* is the extent to which the home surrounds the child with an atmosphere of overt conflict, discord, unpleasant argument, recrimination, quarreling, and complaining. *Restrictiveness of regulations* refers to those restrictions set up or implied by the parent as standards to which the child is expected to conform. It includes both prohibitive and positive requirements.

The clearness with which the parent's standards of child conduct are manifested to the child is regarded as *clarity of policy*, while the parent's tendency to explain to the child the reasons for requirements and penalties is called *justification of policy*. *Emotionality toward the child* considers whether the parent's reactions are generally highly emotional or whether they are consistently cool and objective. Any kind of feeling which dominates over reason is classed as emotion. *Coerciveness of suggestion* refers to the parent's influence over the child. It is a rating of the parent's suggestions in dealing with the child's immediate behavior as to their dictatorial quality.

Variables which seem to show little relationship to dominative behavior are also of interest to workers with children. Four of the five showing lowest correlations have to do with the home as a whole. These variables are more general and therefore harder to observe and rate, which may account for some of the low correlation. It may be, however, that specific parent-child contacts are more closely related to a child's behavior patterns than are broad home characteristics.

Sociability of the family is the degree to which the family as a whole directs its energies outward from the home toward society. It in-

cludes all social contacts outside the immediate household, excepting necessary business routine. *Co-ordination of the household* is the routine functioning of the household as to its smoothness of organization. The organization of the household according to the degree to which it is built around the child's needs and welfare is called *child-centeredness of the home. Activeness of the home* refers to the general activity of the home, including amount and quickness of activity, alertness, decisiveness, and tension, insofar as they are manifested overtly as part of the child's environment. The direction of the parent's critical reaction to the child's behavior is called *favorableness of criticism.*

Home Environment Most Influential

This analysis seems to indicate that a child will be more likely to show dominative behavior in his own social group if he has certain relationships with his parents. This is true if he finds at home friction over disciplinary policies, many restrictions on his behavior, general home discord, and many coercive suggestions from his parents. It is likely to be shown if the parent's attitude toward the child is one of dissatisfaction with the manner in which the child meets his requirements, if there is little rapport between child and parent, if the parent shows little understanding, and if the parent is not ready to give desired explanations to natural questions from the child. Also apparently associated with dominative behavior is a lack of readiness on the part of the parent to give either constructive or destructive criticism, to give the child a part in formulating general policies, to clarify and justify these same policies as far as the child is concerned, and to show emotion with the child.

Conversely, there seems to be little relationship between the kind of social behavior shown and the type of criticisms given by a parent, the activity of the home, the child-centeredness of the home, the amount of sociability of family members, and the smoothness with which the home is operated.

The Trend Is Little Short of Alarming

There is a disturbing fact which stands out in bold relief as one views the American scene. . . . Vast sums are being spent for research in the physical sciences by the army, and the navy but no agency is devoting the same attention to those sciences that deal with human relations. . . .

The peril of the future which threatens our civilization is disharmony and discord among men. . . .

According to Professor Slichter, the expenditures for industrial research in 1939 were nine times greater than in 1921. From all accounts the emphasis upon research in industry received a great impetus during the war years. The army and navy have far larger funds for physical research now than ever before in our peacetime history. . . . The Science Foundation contemplated by Congress will be concerned wholly with the natural sciences. The trend is little short of alarming. Unless it is reversed; unless real support can be found for those sciences that deal with the structure and functioning of our society, chaos and confusion are likely to result. It is such chaos and confusion that, in times past, have resulted in social and political upheavals. From a talk by Oliver C. Carmichael, president of the Carnegie Foundation for the Advancement of Teaching, before the Nutrition Foundation meeting in New York, November 14, 1946.

Relative Serviceability of Three Weights of Wool Serge[1]

LILLIAN O. LUND, ETHEL L. PHELPS,
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TO PEOPLE who live in cold climates the protection afforded by wool garments is an important factor. In addition, the amount of service obtained and the cost involved make the selection of wool fabrics and garments a vital matter, especially to those living on medium or low incomes. Consequently the question of choosing between heavyweight or lightweight materials often is raised at the time of purchase.

With these problems in mind three weights (12-, 14-, and 16-ounce) of new all-wool serge were purchased and made into men's trousers which were subjected to the ordinary effects of daily wear by men students at South Dakota State College. These experimental garments were withdrawn from service after 1500, 3000, and 4500 hours of wear. During the experimental period, at the end of each 300 hours of wear, all garments were inspected; mended if necessary; dry-cleaned; and inspected again. Each student kept a record of hours of wear; amount of brushing, pressing, and spot removal used; evidences of wear and damage; and type of activity of the wearer. Additional lengths of material, which had been dry cleaned and stored to parallel the trouser use, were studied together with the fabrics from the worn trousers. The physical characteristics of all these materials were measured under standard atmospheric conditions in the textile laboratory at the University of Minnesota. The procedure as outlined was designed to discover, if possible, whether the heavier fabrics would wear proportionately longer; whether storage and dry cleaning appreciably affect the life of a garment; whether any of the laboratory tests used would give clues as to the possible wearing qualities of the new material.

[1] Paper No. 204, Scientific Journal Series of the South Dakota Agricultural Experiment Station and Paper No. 2325, Scientific Journal Series of the Minnesota Agricultural Experiment Station.

The New Materials

The serges selected were staple worsted fabrics of a type usually chosen for service. Such a serge is essentially the same basic material which, modified by herringbone stripes, contrasting stripes, or small plaid effects, often is referred to as suiting. The characteristics of the three pieces studied are shown in the table. Thickness, breaking strength, and bursting strength increased with each increase in weight. Values for some properties of the 14- and 16-ounce fabrics were quite similar. The size of the yarns and the number of twists per inch decreased with increasing fabric weight, while yarn strength increased with increasing fabric weight. The fibers of which these materials were composed were remarkably alike as to length and contour index in all three cases, although the mean diameter of the fiber in the 12-ounce fabric was somewhat smaller than that found in the two heavier weights.

The Worn Materials

The maximum effects of wear also are shown in the table. Several outstanding changes in fabric properties resulted from the combination of wear and dry cleaning during the total 4500 hours throughout which these garments were worn. The analysis of variance has been used to determine the significance of the changes observed.

increase in strength after 1500 hours of wear may seem inconsistent but possibly was caused by shrinkage. The shrinkage which is due to dry cleaning characteristically is not so great as the shrinkage due to sponging, values for which are recorded in the table shown. These fabrics appear to have undergone some warpwise shrinkage during wear as evidenced by the number of filling yarns per inch.

Values for fabric properties of three weights of wool serge when new and after 4500 hours of wear

PROPERTY MEASURED	DIRECTION OF TEST	UNIT OF MEASURE	12-OUNCE		14-OUNCE		16-OUNCE	
			New	Worn*	New	Worn*	New	Worn*
Weight per sq yd		ounces	7.77	7.05	8.72	8.28	9.94	9.18
Thickness		1/100 inch	24.00	21.58	27.20	24.37	30.05	25.50
Yarn count	warpwise	no. per inch	66.30	67.40	56.70	57.10	57.90	57.40
	fillingwise	no. per inch	56.00	59.00	54.80	56.30	55.20	56.20
Breaking strength	warpwise	pounds	49.25	34.19	57.75	40.13	65.80	43.27
	fillingwise	pounds	43.15	28.81	55.05	36.01	59.60	37.48
Bursting strength		pounds	106.50	74.90	130.60	98.40	140.80	99.65
Elongation								
Breaking test	warpwise	per cent	29.34	22.41	32.67	24.93	34.33	23.56
	fillingwise	per cent	27.33	16.41	35.33	17.93	34.67	19.11
Bursting test		per cent	18.57	15.05	28.57	18.29	22.85	15.43
Shrinkage†	warpwise	per cent	6.22		5.56		5.56	
	fillingwise	per cent	1.38		0.67		1.17	

* Materials worn 4500 hours.
† No data for worn materials.

All three serges after wear had decreased in weight per square yard. A loss in thickness likewise was observed for all of these materials. However, at the end of the third wear period the 14- and 16-ounce fabrics were at least equal in thickness to the new 12-ounce fabric.

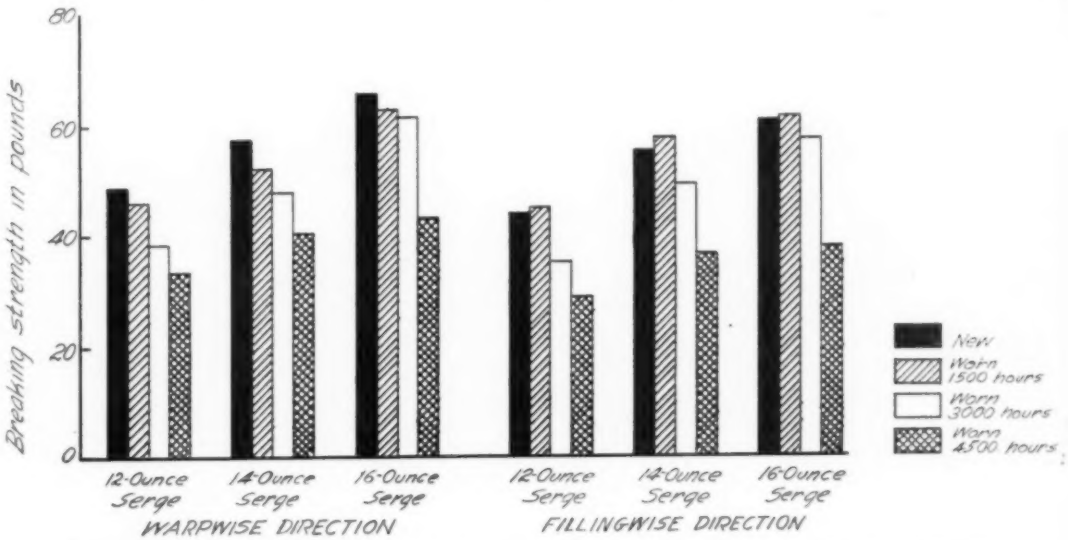
Breaking strength appears to portray the effects of the wear to which these fabrics were subjected. The accompanying figure shows progressive and highly significant decreases in strength when comparing the new materials with those worn for varying lengths of time. While fillingwise strength values for the fabrics worn only 1500 hours were slightly greater than those for the corresponding new materials, thereafter the residual strength in the fillingwise direction followed the same pattern shown for that in the warpwise direction. This slight

Therefore, it might be that the increase in fillingwise strength noted could have resulted from an increase in strength due to shrinkage which had not been counteracted entirely by the effects of wear. The changes in strength of the 16-ounce fabric which resulted from wear during 1500 and 3000 hours were less marked than those for the 12- and 14-ounce fabrics. However, after 4500 hours of wear the 16-ounce material showed outstanding losses which reduced its residual strength in both directions of the cloth to practically the same value as that for the 14-ounce fabric after the same amount of wear.

Bursting strength displayed a trend similar to that shown by breaking strength in that increased amounts of wear lowered resistance to bursting forces. The findings indicated that the loss during the first wear period was

relatively small, followed by more rapid declines during the second and third periods. The slower decrease observed during the first period again might reflect the effect of shrinkage.

The elongation resulting from the application both of breaking forces and bursting forces had diminished considerably by the end of the third wear period. This would indicate



BREAKING STRENGTH OF NEW AND WORN FABRICS, WARPWISE AND FILLINGWISE

a sizable loss of an important and fundamental characteristic of wool fabrics which could be associated with prolonged wear.

Aging, or storing, of the control fabrics had little effect upon the characteristics of these wool materials. Although a few changes in properties were observed at the end of the final storage period, none of these could be proved to be highly significant. However, dry cleaning and storage together effected both small losses and gains in values for some of the physical properties of the control fabrics. Since storage alone could not be shown to have a marked influence upon the properties measured, it would appear that most of the changes noted in these controls might be attributed to dry cleaning.

The effect of wear alone was obtained by subtracting values for the properties of dry-cleaned and stored fabrics from those for the properties of fabrics which had been worn and cleaned. These differences have indicated that a large part of the changes in fabric properties which were found, when comparing worn materials with the corresponding new fabrics, should be attributed to wear alone.

Notations of the effects of wear seen on periodic inspection of the trousers undoubtedly were not complete, but they apparently did indicate trends. In general these observations paralleled changes in the fabric properties measured. The few notations for the first period check with the small changes in fabric properties already mentioned. The marked decreases in weight, thickness, strength, and elongation during the second period were reflected in a great increase in visual evidences of wear. The sharp drop in strength of the 16-ounce serge after the third period was not apparent in the observations of wear for this fabric, although it seems possible that some of the evidences of wear mentioned during the second period in reality might have been associated with the decrease in strength measurements recorded for the final wear period. The character of evident wear and the location of worn areas in these trousers were obvious.

Holes and fraying at the turn of the cuffs, frayed and worn pocket edges, holes in the seat area, threadbare and worn buttonholes were enumerated with decreasing frequency in the order named. Considerable mending was necessary by the end of 4500 hours, but many of the trousers could have been worn longer.

The Choice of Materials

Based on residual values for thickness, breaking strength in both directions of the cloth, and bursting strength, after 4500 hours of wear, the 12-ounce fabric would appear to be inferior to the 14- and 16-ounce materials. At the same time the latter two were notably similar at this stage of wear with respect to these properties. When the decreases in the measured physical characteristics were expressed as percentages of values for the new material, another aspect of the picture was shown. From this angle, the percentage losses in thickness and in warpwise breaking strength and elongation were nearly equal for the 12- and 14-ounce fabrics, while the corresponding percentage losses for the 16-ounce material were much greater. Together these relationships point to the probability that, for prolonged wear, the 14-ounce serge would prove as satisfactory as the 16-ounce fabric, so far as these properties may portray wear, and in some cases may be less expensive. The considerable amounts of wear represented by these three periods have been shown to have caused marked decreases in many of the properties measured. However, it would have been impossible to have predicted, from the original values for the new fabrics alone, exactly what changes would occur, the extent of such changes in fabric properties, or the relationships to be found among the residual values for three such materials after an appreciable amount of wear. These measurements have been useful in showing the effects of wear, but the properties measured cannot be shown to have supplied a basis for prediction of the serviceability of an individual fabric.

Some Present-day Research Needs in Clothing

The dearth of research in the field of clothing and textiles does not imply a scarcity of problems needing study. Many problems are on the agenda of clothing researchers, according to the report of Evelyn Mansfield of Michigan State College and her seminar committee. The 40 replies to questionnaires sent colleges and universities offering a major in clothing and textiles revealed some work in progress but a definite need for more study.

A need for studies that will yield quality standards, help in manufacturing and marketing practices, and bring about improvements in ready-made clothing was emphasized. A comparative study of values to be obtained from ready-to-wear clothing of various price levels was suggested. And labeling—size standards, fiber content, cleaning possibilities—was recommended.

Design problems needing consideration include: the adaptation of design, fabric, and pattern to body build, children's clothing, work needs, aging and changing of women's figures. Suggested also was a study to determine how many persons would choose poor design in dress if there were a predominance of good designs from which to choose.

A closer relationship between textile studies and construction processes, the development of pressing and construction processes suited to various fabric textures, more short cuts and finishes in construction, the standardization of commercial pattern sizes, and minimum standards of construction for ready-made garments are other proposed clothing studies.

Techniques for Measuring Dwelling Livability

BLANCHE HALBERT

Miss Halbert has been chief of the housing facilities section and in charge of home economics programs for the Federal Public Housing Authority since 1938. Her earlier positions included those of director of research and housing demonstrations for Better Homes in America and research director of the President's Conference on Home Building and Home Ownership.

LIVABILITY Problems of 1,000 Families is a published study of the uses made of dwellings by 1,062 families living in low-rent public housing projects. It is a study also of the adequacies and inadequacies of room sizes, storage areas, equipment, facilities, specific design features, and building materials that affect livability.

Public housing projects had been built and occupied several years before a livability study could be made. The evaluation of livability inadequacies and the determination of unmet needs are particularly important to the Federal Public Housing Authority due to the cost limitations on public housing dwellings imposed by the U. S. Housing Act of 1937. This Act requires a cost limit on each dwelling unit. It is obviously more difficult to provide livability needs in dwellings where unit development costs are limited to a minimum than when costs permit desirable dwelling standards. The objective of the study, therefore, was to discover design and construction defects that affect livability in order to make improvements in dwellings already built and provide better standards for new dwellings. The FPHA considered it essential to study dwellings that had been built and occupied and to determine from housing managers and from families the problems of livability that had been experienced over a period of years.

Technique Selection

Techniques as well as scope must vary in all studies with the urgency of need for findings. In short-period studies, such as this, it is necessary to predetermine through the pilot study the major livability problems and which problems may be solved within the cost limits of the housing for which the study is intended. It is necessary also to use short-cut methods to obtain findings and to limit the study to major problems of livability and to remediable ones in public housing.

Cost limitations on public housing can never permit ideal dwelling livability. Detailed motion studies, such as those included in the Pierce Foundation study, were not included in this study, nor was the type of information found in the Riemer study, which gave the exact period and place of activity by each member of the family for each hour daily.

Far too much time is consumed often in obtaining detailed information that cannot be immediately converted into house design. An average of only about a half million houses were built yearly in the two decades preceding the war. The postwar quantity must be increased greatly to reduce as rapidly as possible the existing shortage of 10 or 12 million dwellings. Unless findings are ready and available when these houses are being designed and built, thousands and possibly millions of houses will be built without benefit of dwelling livability research and study. Furthermore, houses usually serve for 30 or 40 years. Many of their inadequacies must last with them, since remodeling may not be possible or, if possible, is usually costly. It is essential to complete surveys and researches in sufficient time to incorporate results in houses to be built immediately. Long-period studies for major livability problems cannot be undertaken. However, continued study is desirable after the findings of the most urgent problems of livability are obtained.

The pilot study for a survey of this type must include a sampling of the various types of dwellings, such as multiples, flats, detached and semidetached houses. It must also include a sufficient number of samples to determine the major livability problems. The actual number of samples for the pilot study cannot be determined in advance of the study since the study should continue until the majority of major problems are anticipated.

It would be advisable to sample housing for the pilot study in all areas where climatic conditions affect design and layout. This is not practicable for a short-period study. Cost also is usually a factor.

Interviewers and Schedules

Considerable discrimination in the selection of interviewers is necessary. Interviewers must have a knowledge of public housing policies and standards, be familiar with requirements for desirable household operations both as to dwelling space and equipment, and possess some knowledge of construction materials, heating, and ventilation. Invaluable qualities are tact in obtaining practicable tenant answers and judgment in evaluating required spaces and equipment consistent with a low-rent public housing program.

Information for this study was obtained through the use of schedules. Both a project management schedule and a tenant schedule were used to obtain complete information.

The *project management schedule* was designed to obtain recommendations to aid in correcting existing housing as well as for improving design, layout, equipment, and materials for new housing. Maintenance, or cost of upkeep, is an important factor in dwelling livability and should always be considered in obtaining recommendations for types of houses, specific design features, equipment, facilities, and materials.

The *tenant schedule* was designed to obtain two types of information—the needs and preferences of tenants and the interviewer's recommendations on tenant needs. Few families living in public housing projects have had an opportunity to live in well-designed houses, and their recommendations on many requirements are not always practicable. In this study each recommendation by tenants was supplemented by recommendations of interviewers. Several questions to tenants are frequently required to obtain the answer to one question on the schedule. Such tenant preferences as specific types of dwellings, a dining room vs dining space in kitchens, and closed or open shelving for kitchens require no evaluation by interviewers.

Schedule information included family size and composition, overcrowding, preferences for dwelling types, preferences for and uses of balconies and porches, problems of entrances, room sizes and layouts, kitchen equipment, storage facilities, inventories of furniture and other family possessions, space uses that affect planning, arrangements that affect uses, care required and upkeep costs of floor and wall finishes, problems of noise due to layout and inadequate insulation, problems of garbage disposal, patterns of living that affect design, preferred layouts for specific areas of the country, heating, ventilation, condensation, lighting, and considerable detail on laundry facilities and storage.

Information supplied by managers and tenants was recorded on the schedules by interviewers—an arrangement desirable for this type of study because of the complexity of many problems and the necessity of confining information to specific questions required. Also, this practice reduces the questions and consequently the schedule length.

Tenant interviews averaged 2 hours per tenant; managers, 3 or 4 hours, including the interviewer's evaluation of specific project facilities. Tenant interviews were made in the unit to give evaluators an opportunity for specific recommendations. All managers, and frequently maintenance superintendents, were interviewed.

A copy of each floor plan to be studied accompanied schedules. Floor plans expedite work in schedule taking. They show existing room and storage dimensions, arrange-

ments, location of lights, and other design features. They provide a simple means of recording recommended changes in areas and equipment.

Scope of the Study

Slightly more than 1,000 families were interviewed and their dwellings evaluated. This number appeared to be an adequate sampling since the 1,000 dwellings in which these families live represent 28,000 dwellings identical in type and design. All types of dwellings were studied. Families with from 1 to 10 members and all ages of children were included. An adequate sampling was made of white, Negro, and Latin-American groups, since these are the predominating ones living in these public housing projects. Families with incomes comparable to those that will be living in low-rent housing were selected. During the period the study was made many high-income families were living in low-rent projects because of the war workers' need of housing. The average annual income for all families was approximately $1,500. A few families whose incomes approximated $3,000 annually were included in order to determine changes in patterns of living for this income group that might affect dwelling design and layout.

Recommendations from the Study

Recommendations included in the report are those that can be incorporated in the design of public housing within its cost limits. However, many recommendations affect only arrangement and reallocation of space, not cost.

In studies of this type, where much of the information concerns space and space allocation for room and storage areas, it is necessary to recommend flexible spaces. Regardless of the care exercised in obtaining inventories of sizes and quantities of family possessions, precise areas should not be recommended for items. Although, with sufficient sampling, fairly definite information on possessions can be obtained, some flexibility in space must be allowed for irregularities and changes during the period the house is used.

Time is improperly spent when months of study are consumed to determine the precise areas for kitchen utensils that would be the precise size and number required for a family of a given size. This is true also of cleaning equipment, laundry equipment, and to some extent of furniture. Low-income families, particularly, can never afford to buy exact sizes of articles required for family size. For instance, recommendations for dining areas must take into consideration the various shapes of tables families might possess—not the shape of the table that will require the least space. Linen closet recommendations should not be based on the size of the fold of linen used by a specific laundry. Caution should also be exercised in recommending devices that are expensive to build.

Findings of studies and resulting recommendations should be prepared so that architects may readily incorporate them in new designs. Too much detail on findings is inadvisable. Use of floor plans is desirable, though only that portion necessary to indicate the need in design should be presented. Where findings relate to families of a specific income range, only those recommendations which can be used within the cost limits of the houses to be built should be included.

Conclusion

This public housing livability study represents but a small per cent of the findings required. Many studies on dwelling livability are needed—urgently needed. Required are specific studies of public housing, new over-all studies of moderately high-cost urban housing, of nonfarm and farm housing. Research is needed on floor and wall finishes that will reduce labor and maintenance costs, on counter shelving, on gas stoves, and on other equipment. But if these studies are long-period studies their findings will not be obtained in sufficient time for livability improvement in the large volume of houses that must be built almost immediately.

Rancidity Development in Raw versus Precooked Frozen Pork Sausage[1]

BETTY M. WATTS and DA-HWEI PENG

Mrs. Watts is in charge of Purnell research in foods and nutrition at the State College of Washington. She received her doctorate in biological science at Washington University, St. Louis. Da-Hwei Peng (Mrs. Kan) is a graduate of Ginling College. She worked for five years in the nutrition institute under the National Health Institute of China. She now holds a research fellowship at the State College of Washington.

LEA (*1*) clearly demonstrated the presence in pork muscle and adipose tissue of a heat-labile enzyme capable of accelerating peroxidation of the unsaturated fatty acids of pork fat. The activity of the enzyme was high between pH 4 and 5, falling off with increasing pH to a negligible value at pH 7. Sodium chloride markedly increased its activity.

Later work by Dubois and Tressler (*2*) showed that the addition of salt to ground pork to be preserved by freezing hastened rancidity during freezing storage, a result which might have been predicted from Lea's earlier experiments. No work seems to have been published on the effect of pH on rancidity development in frozen pork, although from Lea's work a large pH effect might be predicted under conditions where the enzyme is not destroyed. Nor do there seem to be any published comparisons on raw frozen pork (in which the enzyme should be active) versus precooked pork in which the enzyme is presumably destroyed.

The present study is a comparison of the effects of pH and of various salts on rancidity development in raw versus precooked ground pork preserved by freezing.

All meat to be used for any one experiment was mixed very thoroughly by hand after grinding. Five hundred gram portions were then weighed out for each experimental variation. The cooked samples were heated in the upper part of a double boiler with constant stirring to a temperature of 70° C, which is sufficient to destroy the fat oxidizing enzyme (*1*). The cooking required about 12 minutes.

After treatment, all samples were made into 50 gram patties, packed into cardboard freezer cartons (8 to the carton) without preliminary wrapping, and frozen at −15° to −18° C. Individual patties were drawn out at intervals for examination and rancidity analyses.

The peroxide number was used as a measurement of rancidity development. To extract the fat, half of each meat patty (25 grams) was mixed with 50 grams anhydrous sodium sulfate (drying agent) and 80 ml of technical carbon tetrachloride. The mixture was whirled in a blendor for 2 minutes, then filtered through Number 2 Whatman filter paper into glass-stoppered cylinders. (With occasional samples in which a clear filtrate was not obtained with these proportions, the meat was returned to the blendor with additional sodium sulfate.) The filtrate was thoroughly mixed by inverting the cylinders.

Aliquots of the filtrate were dried to constant weight in an air oven to determine the amount of fat per ml of filtrate. An amount of filtrate containing 0.4 to 0.6 gram of fat was

[1] Scientific Paper No. 697 of the Agricultural Experiment Station, Institute of Agricultural Sciences, State College of Washington. (Part of the National Cooperative Project for Conservation of Nutritive Value of Foods.)

then drawn off for peroxide determination by the Wheeler method (*3*). The peroxide values were expressed as millimoles of peroxide per kilogram of fat. It should be pointed out that there seems to be little uniformity in method of reporting peroxide values. Many recent workers have departed from the original Wheeler method and are expressing peroxides as milliequivalents rather than millimoles. Expressed as milliequivalents, the results would be just double the figures that are reported here.

Rancid odors were generally detectable at peroxide values between 10 and 20, although with samples stored a year or more odor ratings were of little value since many acquired absorbed odors. Samples were arbitrarily termed rancid at the lower peroxide value of 10. In general peroxide values were highly reproducible and showed regular increases after peroxide formation had started.

Where all samples in any one experiment had turned rancid, i.e., reached a peroxide value of 10, the results were expressed as months required to turn rancid. When one or more members of a series were not rancid, the peroxide numbers at stated storage periods were given.

For pH determinations, 10-gram samples of the ground meat were made up to 100 ml with distilled water, shaken at intervals for 20 minutes, decanted, and the pH determined on the liquid portion by means of a Beckman pH meter.

Effect of pH

The ground pork used for this experiment was obtained from the department of animal husbandry through the courtesy of Mr. Kline. Determinations of pH were made on meat from a number of different hogs which had been slaughtered at the same time, refrigerated for 2 days, and then ground. The sample selected was that which had the highest original pH (6.5) at the time of measurement.

Various quantities of 85 per cent lactic acid ranging from 0.3 ml to 6 ml per 1,000 grams of meat were made up to 10 ml with distilled water, then mixed thoroughly with separate portions of the meat. Half of each portion was cooked, the remainder packaged raw. The results are shown in table 1. Lactic acid values were calculated as per cent by weight of meat.

TABLE 1

The effect of pH on rancidity development in raw and precooked frozen pork sausage

PER CENT OF LACTIC ACID ADDED	pH* OF RAW MEAT	PEROXIDE NUMBER AFTER 4.5 MONTHS' STORAGE	
		Raw	Cooked
No acid	6.5	2.0	3.3
0.031	6.4	1.6	3.7
.103	6.1	5.9	2.9
.206	5.6	16.9	3.6
.617	4.8	25.2	4.7

* pH of cooked samples was usually 0.1 to 0.2 higher than raw.

The pH had a marked effect on rate of rancidity development in the raw meat but had little, if any, effect on the cooked meat. At the upper pH values (6.4 and 6.5) the raw meat showed slightly lower peroxide values than the cooked meat at the same storage interval. At pH 6.1, the relation was reversed and as the pH was lowered still further, the difference between the raw and cooked sample became increasingly great.

Except for the lowest pH value in this series, all samples were well within the normal pH range of fresh pork muscle, which varies between the approximate limits of 5.2 and 6.6. On seven other comparisons of rancidity development in raw vs cooked pork in which the original pH values of the raw meat ranged from 5.6 to 6.3, the raw samples in each case became rancid before the cooked. Peroxide values for the raw samples ranged from 4.8 to 16.4, whereas for the corresponding cooked samples at identical storage periods the range was from 2.2 to 4.5.

Effect of Salts

While the accelerating effect of sodium chloride seems to have been well established

both for frozen and also for cured pork, the effect of other salts has not been investigated nor is there any information on the effect of sodium chloride on cooked pork.

In an attempt to determine whether the accelerating effect of sodium chloride was due to the sodium or the chloride ion, an experiment was set up in which various salts of sodium and various chlorides were compared with sodium chloride. The concentration of sodium chloride used (1.5 per cent) was about that which would ordinarily be added to sausage for best flavor. Potassium chloride and magnesium chloride were added to portions of the same lot of sausage in concentrations necessary to give the same weights of chloride as that in 1.5 per cent sodium chloride. Sodium sulfate was also added in the concentration necessary to give an equivalent weight of sodium. In all cases the salts were first dissolved in 25 ml of distilled water and then thoroughly mixed with the 500 gram samples of meat. In the control sample, the same amount of water with no salt was added. The ground pork used in this and other experiments with salts was obtained from a local butcher. Its history was not known.

The results (table 2, experiment 1) showed marked differences in the accelerating effect of the salts tested on rancidity development, but the effect was not traceable either to the sodium or the chloride ion as such. While sodium and magnesium chlorides had a marked accelerating effect, potassium chloride and sodium sulfate in equivalent concentrations had no effect.

A second experiment was set up in the same manner to determine the effect of various concentrations of sodium chloride and sodium acetate on development of rancidity. The results (table 2, experiment 2) showed an increased acceleration with concentration of sodium chloride at least up to 3 per cent, the highest concentration used. Sodium acetate had the same effect as the chloride in equivalent concentration.

In table 3 are shown the effects of the addition of sodium chloride and sodium nitrate to cooked and raw pork and of potassium nitrate to raw pork. Neither of the salts tested had any effect on the cooked pork, while all three accelerated oxidation in the raw pork.

Discussion of Results

The presence of an unsaturated fat oxidase is obviously an important factor in the development of rancidity in raw pork preserved by freezing. The problem of rancidity development in raw pork is entirely different from that in cooked pork. Acids and certain salts (and possibly other unknown enzymic accelerators or inhibitors) have a marked effect on the raw pork but none on the cooked. Normal variations in the pH of raw pork may account for much of the observed variation in rate of rancidity development in individual pork carcasses. More work seems to be needed on pH changes in pork muscle after slaughter, such as have recently been

TABLE 2

Effect of various salts on rancidity development in raw frozen ground pork

EXPERIMENT	TREATMENT PRIOR TO FREEZING	pH	TIME TO TURN RANCID IN FREEZING STORAGE (PEROXIDE NO. = 10)
			months
1	Control, no salt added	6.4	11
	1.5% NaCl added (0.59% Na and 0.91% Cl)	6.3	4.5
	1.94% KCl added (0.91% Cl)	6.3	11
	2.7% $MgCl_2$ added (0.91% Cl)	6.1	4.5
	1.78% Na_2SO_4 added (0.59% Na)	6.3	11
2	Control, no salt added	6.0	8.5
	0.5% NaCl added	6.0	7
	1.5% NaCl added (0.59% Na and 0.91% Cl)	6.0	6.5
	2.0% NaCl added	6.0	6
	3.0% NaCl added	6.0	4
	2.06% CH_3COONa (0.59% Na)	6.1	6.5

reported on beef (*4*). It would also be of interest to extend the pH beyond the normal limits of meat in order to determine the pH of minimum and maximum rancidity.

Since the enzyme is apparently destroyed by heating, the question immediately arises as to the practical value of precooking pork which is to be preserved by freezing. In the present study, with one exception in which the original pH of the meat was high, the cooked samples all kept better than the raw. However, the cooking procedure used was probably not such as would ordinarily be employed. The actual heating period was brief. In braising pork chops the heating period is somewhat longer, and in baking large roasts or meat loaves, it is very much longer. Furthermore, the fat is not brought into such close contact with the muscle juice. Under such conditions, the accelerating effect of the heat treatment on rancidity might be greater than the inhibiting effect due to destruction of the enzyme. Work on larger cuts is under way. It would be of interest to determine the effect of cooking by means of dielectric heat as a preliminary treatment for frozen pork.

TABLE 3

Experiment 3. Effect of various salts on rancidity development in raw and cooked frozen ground pork

SALT ADDED	pH* OF RAW MEAT	PEROXIDE NUMBER AFTER 10 MONTHS' STORAGE	
		Raw	Cooked
No salt	6.3	5.5	2.6
1.5% NaCl (0.26 mol.)	6.3	15.2	2.4
1.0% $NaNO_3$ (0.124 mol.)	6.3	13.7	2.3
1.25% KNO_3 (0.124 mol.)	6.3	12.3	—

* pH of cooked samples was 0.1 to 0.2 higher than raw.

The activity of the various salts studied gives no clue as to the mechanism of the acceleration. Salts which have been found to accelerate rancidity in raw pork include sodium chloride, sodium nitrate, and sodium acetate, magnesium chloride, and potassium nitrate. Potassium chloride and sodium sulfate were without effect. It is possible that the lack of acceleration in the case of sodium sulfate might be due to a superimposed synergistic antioxidant effect, since sulfuric and phosphoric acids (but not other inorganic acids or their salts) have been shown to supplement the effect of phenolic antioxidants, including tocopherol (*5*).

The work reported here casts no light on the nature or identity of the oxidizing enzyme in pork. Hemoglobin and other tissue components containing iron porphyrin have been shown to be powerful catalysts for the oxidation of linolic acid, the hemoglobin being itself decomposed with loss of red color during the early stages of oxidation (*6*, *7*, *8*). There is no evidence to establish the identity or nonidentity of heme compounds and the muscle juice enzyme of pork. Presumably, if they are identical, the activity of heme compounds should be destroyed by heat and accelerated by salts and acid. Further work on this point is under way.

In this connection, it was noted in the present study that transformation of the original pink color of the pork to grey or brownish grey invariably accompanied rancidification. In fact, a surface bleaching often preceded the first detectable increase in peroxide number; and at a peroxide number of 10, many of the sausage patties were bleached throughout. Separate analysis of grey and pink areas invariably showed the rancidity confined to the discolored areas; portions retaining their bright pink color did not give measurable peroxide numbers. Evidently hemoglobin takes part in the oxidation, whether or not it is the enzyme affected by cooking, salts, and acids. Brooks (*9*) has called attention to the effect of salt and acid on the oxidation of hemoglobin in meat.

Summary and Conclusions

1. Rate of rancidification of raw ground pork in freezing storage increased rapidly with decreasing pH of the meat, within the

pH range 6.5 to 4.8. The pH had no effect on rancidification of precooked ground pork. Except at the upper limits of the normal pH range of fresh pork, the precooked meat kept better than the raw.

2. Certain salts (sodium chloride, sodium nitrate, sodium acetate, magnesium chloride, and potassium nitrate) had a marked accelerating effect on rancidity development in raw ground pork in freezing storage but not on precooked ground pork. Other salts (potassium chloride and magnesium chloride) had no effect.

3. The effects of acids and salts on rancidity development in raw pork are believed to be due to the activity of a fat peroxidizing enzyme, possibly hemoglobin. Decomposition of the hemoglobin, with a resulting discoloration of the meat, accompanied rancidification.

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The $250,000 Questions

What is the basis of the figure $250,000? Other organizations now campaigning for building funds have set goals varying from $200,000 to $500,000 for a building and $100,000 and upward for maintenance endowment. The $250,000 seemed a reasonable estimate for our needs.

What about financial management? The AHEA has appropriated an amount from general funds to take care of campaign expenses so that all money contributed will be set aside as a permanent headquarters fund. A separate bank account is maintained for the fund. Careful records are kept by the secretary of the fund committee, and bookkeeping is done by the Association's bonded bookkeeper. The Association's investment committee has instructed the treasurer to invest, as it accumulates, each $5,000 in government bonds.

What is the shape of things to come? When the fund is raised and real estate values stabilized, we shall use the best advice available as to whether to buy and remodel a building, build a new one, or buy a section of a new, modern co-operative building.

How can we do it? We set no ceiling or floor for the amount of a gift; but a mathematical juggling of 17,000 members and $250,000 gives a quotient near to $15. Therefore, $5 a year for three years and, presto, we have $250,000! But quotas seldom turn out 100 per cent. Many members will want to up this quota, even join the $100 club. In fact, 16 donors have already done so. Some will want to give or raise a larger amount as a memorial to a home economics pioneer. This, too, has been done. What will you do?

Some Problems of Sampling

Dr. Dorothy Dickins, head of the home economics department of the Mississippi Experiment Station, Mary A. Grimes, textile and clothing specialist at the Texas Experiment Station, and Dr. Georgian Adams, home economist in the USDA Office of Experiment Stations, here summarize their technical discussions at the annual meeting of the AHEA in 1946.

Family Economics

DOROTHY DICKINS

The four types of problems involved with sampling in family economics studies are: (1) problems inherent in the method of collecting the data; (2) problems arising in the process of collecting data; (3) problems concerned with selecting the sample; and (4) problems of measuring the reliability of the sample.

The first set of problems arises because the best methods for securing accurate responses are not the best methods of getting representative groups of families. The most nearly accurate socioeconomic data can be secured by trained personnel from records kept by family members under close supervision. But those who will keep such records are members of above-average families, that is, families with superior practices.

Problems arising in the process of collecting information from families supposed to be included in the group to be studied are refusals, the inability of families to give the desired information, and unsuccessful attempts to make contact with families.

Problems arising in connection with selecting the sample by the quota method are: quotas based on historical data which in periods of rapid change may be inaccurate and biases of interviewers in selecting the families or individuals for the study.

Farms selected by the random-point selection method are likely to be large rather than small farms and for this reason to be biased.

Samples selected by the random selection method have the disadvantage of usually depending on historical information as a basis for expansion. However, random selection of geographic areas ("area sampling") produces a mechanical means of selecting the persons to be interviewed and does not depend on historical data either for the selection of the sample or for making estimates of the population characteristics from the characteristics of the sample. One difficulty in using the area sampling method is the difficulty in delineating sample areas so that they can be located easily.

The fourth problem exists because the composition of the whole group is not known and the sample must be tested by empirical methods.

It is not to be inferred from this analysis that there are grounds for discouragement or that the situation is entirely hopeless with regard to attainment of useful accuracy. Accuracy needed depends on the objective. If when the survey is complete it turns out to be useful in the sense of helping provide a rational basis of action, it has accomplished its purpose.

Textile Fibers and Fabrics

MARY ANNA GRIMES

The matter of sampling is probably the most difficult of all textile research problems. Sampling once seemed to be merely a matter of making a definite number of tests, 5 or 10 perhaps, with no stress on how the sample was obtained or consideration of its variability.

We are advised to take samples or specimens from a "homogeneous" source or take them at "random." How can we be certain that samples of wool or cotton fibers, for example,

are homogeneous? If taken at random how should they be chosen and how many tests made?

It is the custom to take, from one or both sides of the cotton bale, a handful of cotton which is used by the cotton classer for his judgment of grade and staple. From this same sample are frequently taken subsamples for studies of fibers. Does such a relatively small sample represent the bale which contains many billions of fibers? No amount of mixing and taking at random will result in good sampling if the original sample was not representative of the bale. The matter of sampling a bale of cotton, or bales from a field, is not a simple one. Further, the use of fibers from a single seed, lock, boll, or plant fails to offer a solution to the problem because fibers may differ from seed to seed within the same lock, from lock to lock of the same boll, from boll to boll on the same plant, and from plant to plant.

Sampling of raw wool and mohair presents problems similar to those of cotton. A method of sampling by removing cores from bags of wool to use in determining shrinkage is being studied extensively by the Texas Agricultural Experiment Station in co-operation with the United States Department of Agriculture. It is recommended that at least 8 bags of wool, each with 10 core samples, 80 samples, must be used to come within ± 1.2 per cent of the true shrinkage in 95 per cent of the cases.

Fabrics frequently permit the use of the Latin square method of sampling with satisfactory results.

Recently developed equipment, such as abrasers, pose sampling problems.

The problem of sampling garments is often complex, in part because the size of the sample is often necessarily small. This limitation makes even more imperative the use of good judgment in sampling.

Having finally decided upon a method of sampling and the tests to be made, whether fiber, fabric, or end product, statistical methods should be used to determine whether the results of the tests indicate that the sampling was satisfactory. However, it must be remembered that no amount of statistical analyses will compensate for poor sampling. Results are only as reliable as the sample. Statistical analyses should be used to determine the variation between specimens, for the sample as a whole, and if possible between other samples of the same material. It cannot be said that the coefficient of variability must not exceed 2, 3, or even 10 per cent, for its size depends upon what is being measured. For example, in determining the mean or upper quartile length of cotton fibers by arraying them, it is found that the coefficient of variability may be somewhere between 20 and 40 per cent and this range of variability may be said to be normal. Decision as to whether or not the variability found in each case is allowable, depends finally upon the judgment of the worker as does also the selection of the number of tests to be made. In fact it can be safely stated that successful sampling depends more upon sound textile knowledge and good judgment than upon the size of the sample, the number of tests, or knowledge of statistical methods.

Food Composition

GEORGIAN ADAMS

Because of the variability of biological materials, the problem of sampling must be given special consideration in any study of the composition of foods. Every commodity presents its own peculiar sampling problem, and every experiment calls for its own set of sampling plans. Sampling so as to obtain a representative population for chemical analysis is one specific phase of the problem; sampling to obtain in a limited amount of material specimens representative of the total population being studied is another phase of the problem and one which calls for an experimental design in the planning of the project.

Selective distribution of vitamins in different parts of the fruit or vegetable makes it necessary, in sampling for analysis, to rep-

resent all of these parts in their proportionate amount or, if it seems feasible, to consistently leave out any particular portion, such as petioles of spinach or midribs of kale, which are much less rich than the leafy part in minerals and vitamins. Cabbage is usually sampled in wedge-shaped sections cut from tip to base in order to include representative portions of wrapper and inner leaves. Outer leaves are much richer than the inner leaves in ascorbic acid, thiamine, and riboflavin. Carrots and parsnips, which have their vitamin content unevenly distributed between medulla and cortex and between tip and base, are likewise often sampled in wedge-shaped portions cut through to the center from tip to base.

Loins of pork decrease in thiamine content from the lumbar to the thoracic end. In view of this variation, a sampling device that has been used in studying the thiamine losses in the cooking of pork loin has involved selection of several raw samples distributed from the lumbar to the thoracic end and a corresponding staggered selection of samples for cooking from areas adjacent to those from which the raw samples were taken. In beef, it has been shown that there is a difference between muscles in vitamin content and that there is a large difference between animals. However, individual muscles from the left and the right sides of the same animal have been found to have quite similar vitamin content (dry fat-free basis) and to be suitable for retention studies in which the given muscle from one side is analyzed raw and that from the other side is analyzed after cooking.

In selecting representative samples, consideration must be given not only to the fact that different parts of a fruit or vegetable or grain or muscle differ in their content of nutrients but that whole units as well may vary in composition. Individual beef muscles, sweet potatoes, apples, and tomatoes, to mention but a few items, differ in composition from sample to sample. In a study on apples now under way this fact was recognized, and preliminary sampling investigations were carried out before making a study of the varietal differences of ascorbic acid in apples and of the possibility of increasing this constituent through a breeding program. The great difference in the concentrations of vitamin C of individual apples taken from the same tree and the even greater differences in the ascorbic acid content of apples produced by different trees, showed the importance of using a large number of apples in a sample and of an equal distribution within the sample of apples derived from different trees. In addition, the apples from any one tree had to represent fruit picked from all sides of the tree because a marked difference existed in the concentrations of ascorbic acid in apples from the north and the south sides of a tree. The average concentrations of ascorbic acid in successive samples, each representing both the north half and the south half of each of 10 trees, were not statistically different from each other. A sample thus formulated provided a good base for the study of the effect of any processing treatment on the ascorbic acid content of this fruit.

In a study on tomatoes, a preliminary sampling investigation was carried out to determine how many fruits constituted an adequate sample for analysis in order to insure a reliable mean value and to insure that sample variation would not mask treatment variation. In this study, 80 tomatoes from a uniform source were analyzed individually for ascorbic acid. This analyzation was repeated on two other lots of 80 tomatoes. The results on each lot were broken down for comparison into smaller groups of samples composed of 10, 20, and 40 tomatoes. Statistical treatment of the data indicated that the mean of 20 tomatoes was as reliable as that of 40 or 80 suggesting that a subsample of 20 tomatoes would give a representative ascorbic acid value.

More than 2 million students, a 50 per cent increase over the previous peak enrollment, now attend our 1,749 colleges and universities.

Openings for Graduate Students

NELL B. NICHOLS

Mrs. Nichols is national editor of Omicron Nu, official organ of the national home economics honor society of that name, which has made this survey of assistantships and fellowships available to Journal readers.

OMICRON NU again has polled the colleges and universities offering graduate work in home economics for information about their assistantships and fellowships. An increase in the number of openings is noted although returns are incomplete; a few schools failed to respond. Not all budget clearances for 1947–48 had been made when the compilation was prepared. Undoubtedly additional openings will be announced. Nevertheless, the list indicates many opportunities.

Graduates who apply for these positions are urged to file their applications on time or, better still, to make them well in advance of the deadline.

Here are the results of the Omicron Nu survey.

Alabama, University of

Twenty nonservice fellowships; open to all students of high scholastic attainments; stipend $500. Write Dean A. B. Moore, Graduate School, University of Alabama, University.

The School of Home Economics offers two fellowships in clothing and textiles, at $500; two fellowships in food and nutrition, at $500; two research assistantships in the research laboratory of human nutrition, at $600; and the Avondale fellowship in clothing and textiles, at $750. Write Dean Agnes Ellen Harris, School of Home Economics, University of Alabama, University.

Applications should be made by March 1.

Arizona, University of

One fellowship, in food and nutrition, or household economics, September to September; stipend $450. Write Dr. B. Eleanor Johnson, Director, School of Home Economics, University of Arizona, Tucson. Applications should be made by February 1.

California, University of, Berkeley

Many assistantships, fellowships, and scholarships; open to all students. A printed list of them may be obtained from the Dean of the Graduate Division, University of California, Berkeley. Applications should be made before February 1.

Six research assistantships, at $1,400, and seven teaching assistantships, at $900, are offered in the department of home economics. The areas are food and nutrition, child development, textiles and clothing, and home management. Out-of-state students must have a sufficiently high average to qualify for exemption of tuition fees (ordinarily an A and B record). A traveling allowance of $150 is paid to persons appointed to these assistantships from the Atlantic Coast area; those living east of Chicago receive $125; if they live between Denver and Chicago the payment is $75; those coming from outside of California and west of Denver receive $50. Write Dr. Agnes Fay Morgan, Department of Home Economics, University of California, Berkeley. Applications must be made before June 1.

California, University of, Los Angeles

Six teaching assistantships; stipend $900, plus a traveling allowance for persons living outside of California. Write Dr. Verz Goddard, Department of Home Economics, University of California, Los Angeles 24.

Chicago, The University of

Two assistantships, two fellowships, and one scholarship; in food chemistry, family economics, and child development, October 1 to June 20. Stipends for the assistantships in nutrition and child development are $750 each; home economics alumnae fellowship, $800; university fellowship, $500; university scholarship, $300. Write Mrs. Thelma Porter, Chairman, Department of Home

Economics, University of Chicago, Chicago 37, Illinois, concerning the assistantships, and the Committee on Fellowships, University of Chicago, Cobb Hall, Chicago 37, Illinois, for information about the fellowships and scholarships. Applications should be made by March 1.

Cincinnati, University of

Two assistantships in child development, one at $600 and the other at $800, with remission of tuition fees, are offered. They extend from September 15 to June 7. Write Dr. Ada Hart Arlitt, College of Home Economics, University of Cincinnati, Cincinnati 21, Ohio. Applications should be made in February.

Colorado State College

Two fellowships: one in child development, from September to June (nine months), stipend $600; the other in food and nutrition, from July to July (11 months), stipend $700. Write Dean Flora L. Slocum, Division of Home Economics, Colorado State College, Fort Collins, Colorado. Applications should be made by April 15.

Connecticut, The University of

Five assistantships: in home management, child development, and food and nutrition. They extend from September to September with one month's vacation; stipend $840. Write Dean Evalyn Bergstrand, School of Home Economics, The University of Connecticut, Storrs. Applications should be made before May 1.

Cornell University

A folder on fellowships and graduate assistantships in teaching and research is available from the Secretary of the New York State College of Home Economics, Cornell University, Ithaca.

This bulletin lists a teaching assistantship in family relationships, at $1,400; a teaching assistantship in the nursery school, at $1,000; an assistantship in home management, at $1,500; an assistantship in household processes, at $1,600; an assistantship connected with the financial problems of families, at from $600 to $1,000; an assistantship connected with household equipment and household processes, at from $600 to $1,000; an assistantship in marketing problems from the consumer's point of view, at from $600 to $1,000; an assistantship in child nutrition, at $750; various teaching assistantships in food and chemistry, at from $1,200 to $1,500; a research assistantship on the conservation of palatability and nutritive value in vegetables and fruits, at from $500 to $750; several assistantships in connection with research studies in human nutrition during growth, at from $500 to $750; a number of research assistantships on the quality and nutritive value of baked products, at from $500 to $750; various research assistantships in connection with studies of the vitamin metabolism of human beings, at from $650 to $750; an assistantship in household art, at $750; a laboratory teaching assistantship in quantity cookery, at $1,000 and meals while on duty; an assistantship in quantity cookery in the home economics cafeteria, at from $500 to $600 with two meals a day, Sundays and holidays excepted; two assistantships in the home economics cafeteria and tea room, at from $500 to $600 with two meals a day, Sundays and holidays excluded; an assistantship in quantity cookery procedures as they affect vitamin retention with emphasis on vegetables, at $650 to $750; a teaching assistantship in the costume shop, at $1,200; and a teaching assistantship in the orientation course, which also provides for some research related to the counseling service, at $750.

The Anna Cora Smith fellowship in research, at $400, also will be available.

Write the Secretary, New York State College of Home Economics, Cornell University, Ithaca, New York. Applications should be made before March 15.

Drexel Institute of Technology

Four assistantships: in home economics teaching, institutional administration, textiles and clothing, and food and nutrition; stipend $300, plus 12 credit hours of tuition. Write Dean Ardenia Chapman, College of Home Economics, Drexel Institute of Technology, Philadelphia, Pennsylvania. Applications should be made before July 15.

Georgia, The University of

One assistantship requiring 12 hours of work a week; stipend $642.50. One research assistantship requiring 6 hours of work a week; stipend $500. One fellowship requiring 6 hours of work a week; stipend $442.50. They extend from September through June. Write Mrs. Pauline Park Wilson, Dean of Home Economics, The University of Georgia, Athens. Applications should be made by June 1.

Illinois, University of

Assistants in the department of home economics commonly do graduate work in various areas, as in food and nutrition, textiles and clothing, household management, and child development. The stipend generally is $750 for teaching assistants and $900 for research assistants. Write Dr. Lita Bane, Department of Home Economics, University of Illinois, Urbana.

In addition, scholarships administered by the graduate school frequently are assigned to the department of home economics. Information about them may be obtained from the dean of the graduate school, University of Illinois, 109 Administration Building (E), Urbana.

Applications should be made by February 15.

Iowa State College

Twenty-four assistants, fellows, research associates, and technicians are employed in food and nutrition at $540 to $2,600; one fellow in textiles and clothing, at $540; three fellows in child development, at $675 to $900; three fellows in home management, at $675; one research associate in home equipment, at $1,200; two fellows in home economics education, at $675; and eight fellows in institution management, at $540 to $675. Application forms may be obtained from the dean of the Graduate School, Iowa State College, Ames. They should be sent to Dean P. Mabel Nelson, Division of Home Economics, Iowa State College, Ames. Applications should be made as soon as possible and not later than March 1.

Iowa, The State University of

Two half-time teaching assistantships, September to June; stipend $60 to $90 a month for nine months and tuition exemption. Write Dr. Sybil Woodruff, Department of Home Economics, The State University of Iowa, Iowa City.

One half-time teaching assistantship in home economics education; stipend $600 for nine months and tuition exemption. Write Dr. L. A. Van Dyke, University High School, The State University of Iowa, Iowa City.

A half-time research assistantship may be assigned by the Graduate College to home economics if a suitable candidate appears. The stipend is $60 to $90 a month for nine months and tuition exemption. Write to Dean of the Graduate College, The State University of Iowa, Iowa City.

Applications should be made before March 1.

Kansas State College

Two assistantships in child welfare and euthenics; September to June; stipend $750. Both are in the nursery school. Write the Department of Child Welfare and Euthenics, Kansas State College, Manhattan.

Two assistantships in institution management, September 1 to May 30; stipend $600. Write Mrs. Bessie West, Department of Institution Management, Kansas State College, Manhattan.

One research assistantship in clothing and textiles, September to June; stipend $450. Write the Department of Clothing and Textiles, Kansas State College, Manhattan.

Two assistantships in household economics, September 1 to May 30; stipend $750. Write the Department of Household Economics, Kansas State College, Manhattan.

Two laboratory assistantships in food economics and nutrition, September 1 to May 30; stipend $675. One research assistantship in food economics and nutrition, September 1 to June 30; stipend $750. Write the Department of Food Economics and Nutrition, Kansas State College, Manhattan.

All applications should be made by March 1.

Kentucky, University of

Various assistantships: in child development, food and nutrition, food preparation and meal service, and home management. They extend from September 23 to June 7, stipend $40 to $50 a month. Write Statie E. Erickson, Head, Department of Home Economics, University of Kentucky, Lexington. Applications should be made by June 1.

Louisiana State University

Two assistantships; one in clothing and textiles, the other in home economics education. They extend from September to June; stipend $65 a month. Write Dr. Clara Tucker, Home Economics Department, or Miss Ona Smith, Chairman, Fellowship Committee, Home Economics Department, Louisiana State University, Baton Rouge. Applications should be made by early spring.

Maine, University of

One assistant in nutrition research. Apply to Pearl S. Greene, Home Economics Department, University of Maine, Orono.

Michigan State College

Twenty-two assistantships (6 teaching, 15 research, and 1 other): 12 are in food and nutrition, 3 in home management and child development, 3 in institution administration, and 4 in textiles, clothing, and related art. They extend from the middle of September until the middle of June. The stipends are $800 for the master's and $1,000 for doctoral degree candidates, plus a waiver of course and tuition fees. Half-time work is required. Write Dean Marie Dye, School of Home Economics, Michigan State College, East Lansing. Applications should be made by March 15.

Three fellowships for advanced doctoral candidates are available to students in any field. They pay $1,000 a year, and no service is required. Write the dean of graduate studies, Michigan State College, East Lansing. Applications should be made by March 15.

Mills College

Three fellowships, in food and nutrition, clothing and textiles, and institution administration, September 10 through June 15; stipend is room, board, and tuition, with a value of $860. Write Dr. Carrie C. Dozier, Department of Home Economics, Mills College, Oakland 13, California. Applications should be made by March 1.

Minnesota, University of

Assistantships are offered in food, textiles and clothing, nutrition, related art, and home economics education; September 16 to June 15; stipend $788. Write the Division of Home Economics, University Farm, St. Paul 8, Minnesota.

Students who have a master's degree and desire to work toward a PhD degree may apply for the Shevlin ($500) or the Caleb Dorr ($500) fellowships if they desire. Application blanks may be obtained from the Dean of the Graduate School, University of Minnesota, 234 Administration Building, Minneapolis 34; they should be returned to the Division of Home Economics, University Farm, St. Paul 8, Minnesota.

Applications should be made by March 1.

Missouri, University of

One assistantship in nutrition, September 1 to June 30; stipend $60 a month. Write Dr. Bertha A. Bisby, Home Economics Department, University of Missouri, Columbia. Applications should be made by May 1.

Nebraska, The University of

Five assistantships, of which two are in food and nutrition (either teaching or research); two in family life (one assistant is employed in the nursery school and the other is engaged in research); and one in family economics. They extend from September 1 to June 1; stipend $600; the assistantship in family economics also provides for room rent and food at cost. Write Margaret Fedde, Chairman, Department of Home Economics, The University of Nebraska, Lincoln 1, or to Dr. Ruth Leverton (food and nutrition); Dr. Ruth Staples (family life); or Margaret Liston (family economics). Applications should be made by March 1.

New York University

Two teaching fellowships, at from $1,000 to $1,200, plus tuition fees on three graduate courses, and various scholarships ranging in value from $225 to $600, payable in three installments during the academic year. Applications should be made by March 1. Write Dr. Anna K. Banks, Acting Chairman, Department of Home Economics, New York University, Washington Square, New York 3, New York.

Ohio State University

Assistantships are offered in child development, food and nutrition, textiles, equipment, house furnishings, home economics education, and home management. The stipend is $600 to $900, and tuition fees for four continuous quarters are remitted, except a matriculation fee of $15. Write Dr. Gladys Branegan, Director, School of Home Economics, The Ohio State University, Columbus 10. Applications should be made by March 1.

Ohio University

Five assistantships: one in food and nutrition, two in child development and family relationships, one in food and nutrition research, and one in clothing and textiles. They extend from September to June; stipend $500 with a waiver of the resident fee. Write Dr. Vivian Roberts, Director, School of Home Economics, Ohio University, Athens. Applications should be made by March 1.

Oklahoma A & M College

Six fellowships: two in home economics education, two in household arts, and two in household science. They extend from September 1 to May

31; stipend $750. Write Dean Nora A. Talbot, Division of Home Economics, Oklahoma Agricultural and Mechanical College, Stillwater. Applications should be made in the spring, before June 1.

Oklahoma, The University of

Three to five fellowships, September through May; stipend $500. Write Dr. V. E. Monnett, Dean of the Graduate College, The University of Oklahoma, Norman. Applications are received twice a year, before November 1 for second semester appointments and by March 1 for appointments the following year.

Oregon State College

Seven assistantships: three in clothing and textiles, two in nursery school, and two in food and nutrition research. Three apprenticeships for institution management majors also are offered in the institution economics department. Stipends are $660 to $780 for the assistantships and $650 plus living expenses for the institution economics apprentices. Write Dean Ava B. Milam, Director of Home Economics, Oregon State College, Corvallis. Applications should be made by March 1.

Pennsylvania State College

Twelve assistantships: one in clothing, one in home crafts and related arts, one in food and nutrition, three in home management, two in institution administration, one in home economics education, and three in child development; stipend $100 a month. Graduate assistants give 16 to 20 hours a week to the College and may take 10 credit hours of College work. Write Dr. Grace Henderson, Director, Department of Home Economics, The Pennsylvania State College, State College. Applications should be made by April 15.

Write Dr. Pauline Beery Mack, The Pennsylvania State College, State College, Pennsylvania, in regard to graduate assistantships in the Ellen H. Richards Institute.

Purdue University

Twelve half-time assistantships: in food and nutrition, clothing and textiles, applied design, institution management, and home management and family life. They extend from September to June; stipend $1,000 for 10 months. Write Dean Mary L. Matthews, School of Home Economics, Purdue University, Lafayette, Indiana. Applications should be made in the spring, beginning in April.

Syracuse University

Various assistantships and fellowships, some at high stipends, open to all students. A list of them may be obtained from the Dean of the Graduate School, Syracuse University, Syracuse 10, New York.

Three assistantships are offered in all the areas included in the home economics curriculum. The stipend is $795. Write Dean Annie Louise MacLeod, College of Home Economics, Syracuse University, Syracuse 10, New York.

Applications should be made by March 1.

Teachers College, Columbia University

Two types of assistantships and fellowships are offered. One is open to all applicants, at various stipends. Information about these awards may be obtained from Columbia University, New York 27, New York.

The department of home economics offers 3 assistantships in nutrition, at $500 to $810; and 5 in institution management. The latter include: lunchroom supervisor, eight months, $350 and meals; kitchen supervisor, two openings, $40 a week and meals; two assistantships requiring 20 hours of work a week, $12 a week and meals. Write Dr. Helen Judy Bond, Head, Department of Home Economics, Teachers College, Columbia University, New York 27, New York. Applications should be made by February 1.

Tennessee, The University of

Eleven assistantships: in child development, home management, nutrition, related art, and textiles and clothing, September to September; stipend $800, paid at the rate of $66.66 a month for 12 months, and all fees. Five assistantships in community nutrition; two years of experience are required; stipend $1,200 and all fees. Applications should be made between February 1 and May 1. Write Jessie W. Harris, Director, School of Home Economics, The University of Tennessee, Knoxville.

Texas, The University of

Two nine-months scholarships, at $750, for study in any area of home economics. Preference usually is given to graduates of Texas high schools. Write the Chairman, Home Economics Department, The University of Texas, Austin 12.

There are various fellowships in institution administration for potential administrative dieti-

tians. The stipend commonly is $40 a month plus board and room, but in some instances it is higher for persons who have had successful experience in the institutional field. Write Rosalie Godfrey, Associate Professor of Home Economics, The University of Texas, Austin 12, at least six weeks before the opening of any semester.

Several fellowships have been established for the purpose of promoting higher scholarship and research in all fields; nine months; stipends $200 to $750. Write the Dean of the Graduate School, The University of Texas, Austin 12, before March 1.

Washington, The State College of

Fellowships are offered in child development, home furnishings, clothing, textiles, food, institution economics, nutrition, and household equipment. Teaching fellowships extend from the middle of September until June; research fellowships are on an 11-months basis. Fellows are required to devote half their time to teaching or research and the remainder to graduate studies. The stipend is $900 and exemption from nonresident tuition. Write the Dean of the Graduate School, The State College of Washington, Pullman. Applications should be made by April 1.

Washington, University of

One fellowship in nutrition and one in costume design and construction; stipend $855 for each. Write the Director, School of Home Economics, University of Washington, Seattle 5. Applications should be made by April 1.

Western Reserve University

Three assistantships: two in food and nutrition, one in interior decoration and related art; September 15 to June 15; stipend $600, with 18 semester hours of tuition. Write Dr. Helen A. Hunscher, Home Economics Department, Western Reserve University, 2023 Adelbert Road, Cleveland 6, Ohio. Applications should be made by March 1.

Wisconsin, University of

Various Wisconsin Alumni Research Foundation assistantships, at $800 for the academic year or $1,000 for 12 months; several teaching and research assistantships, at $800; a university fellowship, at $800; and other scholarships and fellowships. A few positions as resident counselors in women's dormitories available to properly qualified graduate women; no cash payment made, but the price of board and room is remitted. Students may major in home economics education, food and nutrition, related art, clothing and textiles, and housing; or they may take a joint major with a closely allied department, such as biochemistry. Application blanks may be obtained from the Dean of the Graduate School, University of Wisconsin, Madison. They should be returned to Prof. Frances Zuill, Director of Home Economics, University of Wisconsin, Madison, before February 15.

AHEA Fellowships and Scholarships Available

Four graduate research fellowships for study in any area of home economics at any college or university the candidates may choose are awarded by the American Home Economics Association. The Ellen H. Richards fellowship is a biennial grant of $1200 (available for 1948–49). The Omicron Nu fellowship is a biennial grant of $600 (available for 1948–49). Two Evaporated Milk Association fellowships, limited to research in food and nutrition, carry annual grants of $750 each.

Application forms for these research fellowships are available from the Association headquarters, 620 Mills Building, Washington 6, D. C. Applications should be on file before January 15.

About five international scholarships are awarded by the Association annually to foreign students who wish to do graduate or advanced undergraduate work in this country. The stipend for each is $800 (of which $400 or the equivalent in tuition or living expenses is provided by the college or university to which the student is assigned). The application form of the Institute of International Education is used. Forms may be obtained from the AHEA or from either the established scholarship selection committee in the student's own country or the cultural relations attaché of the U. S. Embassy there. The selection committee or the attaché will indicate the date on which applications should be returned to them for submission to the Institute. Applicants from only those countries where there is no committee on selection or no U. S. Embassy may submit their applications directly to the AHEA up to January 1.

In Short . . .

Research Leaders Needed

RUTH O'BRIEN
Bureau of Human Nutrition
and Home Economics

The panel discussion held jointly at the 1946 annual meeting by the AHEA department of colleges and universities and the AHEA research department on "Recruiting and Training Home Economics Research Leaders" brought together many research and education specialists.

Led by Hazel K. Stiebeling, chief of the Bureau of Human Nutrition and Home Economics, the panel included Jean D. Amberson, Edna P. Amidon, Marie Dye, Beatrice J. Geiger, Bess Heflin, and Thelma H. Porter. More than 100 attended, many of whom contributed to the lively discussion.

Dr. Stiebeling opened the meeting by pointing out that a study made of 37 colleges and universities in 1943–44 showed that for every 542 bachelor of science degrees conferred on women, there was only one PhD. On the other hand, during the past 10 years, for every 540 bachelor of science degrees granted to men in agriculture and forestry alone, there were 70 master of science and 30 PhD degrees. In other words, it takes 542 bachelor degrees to produce one woman PhD while the same number produces 30 times as many men PhD's in only two fields of science—agriculture and forestry.

Dr. Geiger reported that her committee, appointed by the AHEA executive board to find ways of increasing the number of research leaders both for training graduate students and conducting research, decided that facts are needed on (1) how many institutions are conferring advanced degrees in home economics, (2) how many home economists are engaged in research, and (3) what financial assistance (fellowships, scholarships, assistantships) is available.

A study in Pennsylvania reported by Jean Amberson showed that only 2 of the 19 institutions are doing research in home economics—the others found it impossible under present circumstances.

Edna Amidon brought out the point that the qualities needed in a good research worker are also necessary in other lines of work and should be stressed in elementary and secondary teaching—such as intellectual integrity, accuracy, capacity to observe, and ingenuity.

Causes for Present Meager Research

The panel and others participating in the discussion attributed the present lack of home economics research training to: heavy teaching schedules; inadequate funds for equipment, libraries, and other facilities; little interest on the part of administrators; indifference of college teachers who might be doing some research; no arrangements for leave-of-absence for study and research; and inadequate fellowships.

To Remedy the Situation

The spirit of this panel discussion was "Let's do something about it. Let's get action."

Suggestions included: impress administrative officers with the fact that the present situation constitutes a real emergency; use high-powered salesmanship to get more funds for equipment and libraries; encourage young instructors who want to do research; lighten teaching loads of staff members who will conduct research; grant leave-of-absence for advanced study; give adequate clerical and other assistance to research supervisors; improve guidance and counseling of students; "spark" the students who show potential research ability; recognize and honor students going into research; "expose" students to the research going on at the institution where they are working; arrange workshops for exchange of ideas among research workers; interpret research findings to students and lay people.

Other specific suggestions for action were: support the regional conferences which Dr. Geiger and her committee are planning for the purpose of studying ways and means of recruiting and training more research leaders for graduate work and for research jobs; prepare an AHEA pamphlet on research opportunities to help interest students and to aid deans of women and other student counselors in finding ways of getting the co-operation of related departments from which women trained in contributing subjects might be drawn.

Children in Trouble

MRS. LYDIA ANN LYNDE
Specialist in Parent Education
U. S. Extension Service

In every community in every state, some children are in trouble or headed toward trouble. The increase in predelinquent and delinquent behavior throughout the country has aroused national concern. Seriously and soberly hundreds of citizens from all walks of life and from all parts of the country assembled in Washington to work on this national problem and to throw together the full force of their many agencies in solving it. This National Conference for the Prevention and Control of Juvenile Delinquency was held in Washington, November 20 to 22, 1946.

When Attorney General Tom C. Clark was told about juvenile delinquents under the control of the federal Department of Justice, he asked: "Why do these youngsters turn to crime, and how can they be rehabilitated?" He became convinced that all juvenile crime must be fought through one simultaneous effort made in the home, the neighborhood, the rural areas, and the cities.

Prior to the November conference the Attorney General called together groups of persons to serve as special panels to do preliminary exploration and to lay the groundwork for conference action. This work started early in the summer of 1946. Sixteen panels met—some many times. Panel members took home individual assignments and worked long hours to complete them. The foundations for the conference were painstakingly laid. It was to be a work conference with no fanfare, no frills. There was a job to be done.

Persons invited to participate were selected because they had knowledge and experience to contribute. They came from all corners of the nation at their own expense to make their contributions. They were assigned to small panels that were concerned with the individual aspects of the prevention and control of delinquency. During the three days (and nights) of the conference these 16 panels and their many subpanels, all small groups, each with an assignment, worked meticulously to develop their parts of the conference report. The panel assignments were: community coordination; institutional treatment; juvenile courts and detention; role of police; recreation; housing; youth participation; citizen participation; child guidance; the church; the school; the home; rural aspects; case work and group work; statistics; and press, radio, and movies.

Out of each panel has come a report which analyzes many different situations and makes recommendations to the states and to communities in the states. Each report will be important to the home economist. It is planned to release first a summary of the recommendations, then, as rapidly as possible, to make available complete reports.

Home economists had a significant part in the preparation of the preliminary reports and in the deliberations of the working panels. Every home economist will want copies of the reports prepared by the panel on home responsibilities and the panel on rural aspects. The latter contains a section on home responsibilities which supplements the main report.

This Washington conference is only a beginning. It has provided the challenge to each of us to carry the torch in the local community. The real work now lies in the hands of the people.

Comment . . .

Inescapable Responsibility

Some pictures are not lovely. For instance, that of thousands of children in Europe who still lack even pencils, paper, books—the simplest educational materials; whose school buildings have been destroyed or badly damaged; whose teachers have had little or no training since the beginning of the war; and whose libraries and museums have been stripped or burned. Or that of the "lost generation"—10 to 20 year old youths—who have suffered hunger, cold, disease; who have experienced the terrors of war and enemy occupation; whose education has been neglected or received under Axis direction.

Yet two years have elapsed since the European liberation! Is this situation any concern of yours and mine? Any responsibility of the organizations of which we are members? Of the AHEA?

To the conferees at the National Conference on International Educational Reconstruction which met in Washington in November it seemed that we all have an inescapable responsibility. It seemed to them that both humanitarianism and enlightened self-interest demand that these children and youth receive at least a minimum education. It appeared to the conferees that if the youth in devastated areas remain uneducated, semiliterate, unskilled, unable to aid in the rehabilitation of their countries, they may become embittered and follow authoritarian leaders. If neglected today, they may become the soldiers our children must face on battlefields tomorrow.

Four official representatives of AHEA joined the leaders of more than 100 other national organizations in this conference which considered the plight of youth and the conditions of education in war-devastated countries. Our four representatives of home economics joined civic, religious, relief, labor, scientific, and educational leaders in certain major relief recommendations in the firm belief that we, as individuals, would want them to and would support their stand. These are the recommendations:

1. That educational supplies and materials be allotted without discrimination as to race, creed, color, or political belief. And that aid go not only to former allied nations but to displaced children and, as soon as practicable, to former enemy nations.

2. That aid go first to those persons in greatest need. And that provision be made for adequate reporting from recipient to donor.

3. That increased efforts be made to meet the utter lack in many areas of books and periodicals. And that such aid be provided for at least two years.

4. That special assistance, including financial, be given to help teachers buy basic supplies.

5. That educational missions of all types be supported. In other words, that we bring foreign educational leaders to this country for short periods of observation and study and send expert educational advisers to war-devastated countries.

6. That provision be made for thousands of fellowships and scholarships in American universities for advanced study by foreign students. Relaxation of visa and immigration laws, larger fellowship stipends, passage of the Bloom bill, and speedy implementation of the Fulbright Act are involved.

7. That orientation courses be provided.

8. That the State Department appoint more American cultural attachés to improve reporting of educational conditions and the selection of candidates for fellowships.

9. That "educational work camps" be established to give American students opportunity to join with students of other countries in rebuilding destroyed schools and other public facilities.

These recommendations with all their implications challenge us.

Significant action by the AHEA executive committee at its midyear meeting included a

decision to raise the stipend of the five or so international scholarships offered annually by the Association from $600 to $800 and approval of use by our international committee of some of these scholarship funds for travel expenses in this country of foreign leaders.

Your Association is giving time, thought, and money to help improve the unlovely educational picture overseas. What are you doing to assume your personal share of this inescapable responsibility?

Are You Research Minded?

Twenty-two earnest research-minded women from 15 different midwest colleges, both large and small, met in Chicago last fall. They conferred for a day and a half. Do you concur with them in their conclusions?

For instance, do you believe that we should be more concerned about home economics research? Do you think that as individuals we should question more often whether statements we read and quote are backed up by scientific findings? Should we assume an experimental attitude toward our own problems, whether we are teacher, homemaker, or businesswoman?

Research contributes to better home and family life in a thousand and one ways. Do you agree that homemakers with convictions about this should urge home economics departments to carry on research to help solve home problems? And that educators with such convictions might promote research in many ways—by dramatizing persons who have done research; by disseminating information through counselors and Future Homemaker clubs in high schools and through college home economics clubs and Omicron Nu; by arranging exhibits of research; by giving students opportunity to visit places where research is going on; by encouraging students to participate in research projects and to present results of their studies; by helping teachers to see that graduate study will help to clarify and solve some of their own teaching problems; by finding researchers who have social adaptability, enthusiasm that attracts others, and patience to work with and guide younger persons?

Do you go along with the conclusion of the Chicago conference that undergraduate programs which provide fundamental training in English, mathematics, science, and social sciences—especially social sciences—are fundamental to the development of home economics researchers of the future? Should home economics departments keep superior young alumnae and junior staff members informed of available graduate work and urge them to do it?

Would you agree that appointments to fellowships, scholarships, and assistantships should be made earlier (perhaps in January or February) so that recipients could make their plans to better advantage?

Should stipends paid researchers be increased so that they will attract junior staff members, high school teachers, and home economists in business? And how about a study to show the comparative salary scale and training required of researchers and workers in business, industry, teaching, and extension?

Allied questions for thought—and perhaps research—are raised by this committee.

Does the philosophy of marriage and a profession need to be considered anew by home economists? Some superior young women may be interested in planning for both marriage and a profession instead of thinking of a professional life limited to a few years.

Could the conflict between general training for homemaking and the need for specialized training as a basis for graduate work be eliminated by condensing the general undergraduate work, thus providing more time to train for research?

What kind of training should be provided for research?

What should be the irreducible minimum of home economics required of majors in other departments who wish to do graduate work in home economics?

If you are research minded you will try to help answer these questions.

Association Business . . .

Colleges and Universities Department

The department of colleges and universities in attempting to get under way its full program of work for the year has suffered under the handicap of the overload of work that has come to most schools through increased student enrollment. Although there has been much correspondence, all committees for the projects have not been completed, and many who would have liked to work this year find that additional campus duties prevent them from doing extra committee work.

Irma Gross of Michigan State College is chairman of the committee to compile information and sources of information on buildings and equipment for college home economics departments. In many institutions more funds are available now and new buildings are being planned. If you are among the fortunate ones with money to spend, won't you volunteer to work on this committee as well as reap the benefits of its activities.

The committee which has been appointed to study ways of stimulating the organization of a department of colleges and universities in state home economics associations as a means of better implementing the AHEA department's activities is under the leadership of Vivian Roberts of Ohio University. This is a committee that needs your support. Our association is no stronger than are the state groups. Please check with your state president and see if you have an active department of colleges and universities. Send your suggestions to the committee chairman.

Vivian Roberts is also representing this department in the division of food and nutrition in its study of the training of college and university teachers of food and nutrition as a basis for improving teaching at this level.

The college club program is of the utmost importance as a training ground for our future leaders. This program needs more support from home economics administrators, and Pauline Cunningham of Louisiana State University has accepted chairmanship of the committee to study this need.

The responsibility of home economics teachers in colleges and universities to extend their subject matter to serve students other than home economics majors has long been recognized. Knowledge of homemaking, relationships, child study, management of time, money, food, and clothing is essential in the lives of all young women and men. How to encourage students to accept our "wares" is a major problem. All teachers should give it careful thought. Mrs. Girdie Ware of Oklahoma A & M College has been invited to serve as chairman of this project. She needs your help.

Dr. Todhunter, chairman of the department of colleges and universities in the AHEA, is head of the department of food and nutrition at the University of Alabama.

E. NEIGE TODHUNTER

Mary Lyons of the University of Alabama is representing this department in co-operating with the department of institution administration in a study of college training courses offered in school lunch work.

The interests of foreign students in our colleges and universities and the promotion of international understanding between home economists in this and other countries will be the concern of Louise Peet, who will represent this department on the national AHEA committee which is concerned with these questions.

This listing does not cover all projects set out in the year's program of work. Other committee chairmen have yet to be found who are willing to accept appointment and carry forward the work of the department. Suggestions and offers to serve will be welcomed from individual members and from state chairmen.—E. NEIGE TODHUNTER, *Chairman.*

Research Department

The dearth of adequately trained people to teach graduate courses and to direct and participate in research in the various home economics subject matter fields is becoming severe. To study and act on the situation, the Association set up a committee headed by Beatrice Geiger. Your research department sponsored the first regional meeting held by this committee in Chicago last September. Representatives from Iowa, Illinois, Michigan, and Wisconsin participated. (See the report on page 105.)

Each state association has been urged to include in its program of recruitment emphasis on research as a career for home economists, and asked, also, to help sell appreciation of the need for research in order to secure a fair share of available funds and future appropriations for research. The activity we call research is not well understood by the ordinary lay leader or by the students coming up through high school and is not considered an important function to be supported by society, according to R. J. Ojeman in the October 1946 *Science*.

It now appears that the large colleges and universities which have been the training schools of researchers and the source of research personnel are not able to train enough workers in all the various fields of home economics. In view of the shortage, the question arises: should certain schools concentrate on graduate work in a limited number of fields so that excellent graduate training might be obtained in each field in some school, rather than have all graduate schools attempt to give some training in many fields?

And another question which arises is this: why not have the small schools participate in training graduates through regional graduate study?

Since the little researcher may constitute not an inconsiderable factor in the development of knowledge through research, subject matter divisions have been called upon to set up short-time projects which might be carried on in the smaller colleges which now are only teaching departments. The result should be two-fold; to provide everlasting enthusiasm to the teacher engaged in the research, which will make her a better teacher, and to stimulate interest and enthusiasm for research in undergraduates.

Helen Burton, secretary of our department, is compiling the biennial list of home economics research workers in the United States. Ruth Leverton and her committee are assembling information and illustrations from the many different subject matter fields on research as a career to be made into a printed folder for use in vocational counseling.

Dr. King, the chairman of the research department in the American Home Economics Association, is professor of home economics at the University of Vermont.

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FLORANCE B. KING

For several years, there has been no publication of an annotated bibliography of all phases of home economics research. The USDA Office of Experiment Stations publishes annually a list of projects of interest to home economists carried on in land-grant institutions. The list includes also a list of the publications that emerge during the year from this research. In addition to the publication from the Office of Experiment Stations, the U. S. Office of Education has issued abstracts of studies in research in home economics education. The Bureau of Human Nutrition and Home Economics is compiling titles of completed research in home economics for the past three years which are not included in either of the other lists. Titles will include master's and doctor's theses which have been accepted for credit in recognized universities and published research of university faculty members, but a summary of findings will not be provided. These lists will be appreciated by research workers and college and university faculties who are interested in knowing where studies are being carried on and what written material is available on different problems.—FLORANCE B. KING, *Chairman*.

Family Relations and Child Development Division

Our program has three major areas: to encourage the functioning of the division; to facilitate consistent social, emotional, and spiritual growth in the family; and to expand and improve general and professional education in family relations and child development.

The chairman of the division has participated in the National Conference on the Prevention and Control of Juvenile Delinquency, in which she served on two panels—one on home responsibilities, the other on rural aspects. She prepared the basic material on the rural home which was incorporated in the conference report.

To date (December), 37 states have reported appointment of chairmen, and some states have sent in briefs of their plans of work.

Mrs. Ruth Morley of Alabama reports activity for a workshop which will include some emphasis on the family; a plan to make available material for use in family life, such as bibliographies and books and pamphlets for adults and for children; support for conferences on family life; a request that part of the state program be given over to family life and that each subject-matter field be represented on the program committee; work with other organizations in initiating legislation to lower to 3 years the age at which state education funds may be used.

Josephine Kremer of Kansas reports a plan to organize small discussion groups to clarify and define contributions of each area of home economics to child development and family relationships and to promote teaching which incorporates some small unit emphasizing such contributions.

Blanche Good of Mississippi sends a copy of the booklet "Food for Growth," prepared by her committee for the use of persons concerned with the health of children. It is a colorful hand-assembled booklet which contains leaflets and illustrative material from many sources.

The Missouri report, by Esther Prevey, says that each home economics news bulletin will devote some space to child development and family relationships. Items will include notes on new materials and announcements of events and of devices useful in teaching. Efforts will be made toward greater co-operation between teachers and the PTA.

New Mexico, says Mrs. Lulu Anderson, is encouraging discussion groups and the participation of home economists in planned programs. The committee has asked aid from libraries for study groups, is displaying posters and clippings in libraries and public places, and plans to help organize and conduct a children's play center.

Mrs. Lynde, chairman of the AHEA's family relations and child development division, is specialist in parent education in the Extension Service, U. S. Department of Agriculture.

G. W. Ackerman
U. S. Extension Service

MRS. LYDIA ANN LYNDE

Alice Mulvey of Rhode Island says her state association will join the state dietetic association in sponsoring an institute on nutrition and family relationships. Her family life committee has encouraged attendance at group discussions and lectures on youth and marriage today which are being held under the auspices of the Rhode Island Social Hygiene Association.

In Texas the plan presented by Clancy Baldridge encourages members to practice democratic living consistently by making personal sacrifices for the welfare of families and children. Members are urged to discover and to use community resources; to inform themselves about legislation affecting family life and child development; and to work co-operatively to prevent curtailment of existing educational opportunities.

The report of Mrs. Verna Hitchcock of Wyoming tells of plans to assist with a radio series on child development to be given under the sponsorship of the University of Wyoming. Programs will feature the adolescent and be given in co-operation with the psychology and education departments. Her committee is co-operating in an effort to set up a child guidance clinic in Wyoming and in developing a family life conference on the university campus next summer.—LYDIA ANN LYNDE, *Chairman.*

New Books . . .

The Consumer's Economic Life. By JESSIE GRAHAM and LLOYD L. JONES. New York: The Gregg Publishing Co., 1946, 567 pp., $1.92.

This secondary school text, designed "to give the student the basic knowledge needed by him to plan intelligently the selection, purchase, and use of goods and services," is organized into 34 units, subdivided into 80 sections.

Part I is an interesting, brief historical survey of our economic life and of our needs and responsibilities as consumers. Remaining units give general buying guides and specific information in regard to food, clothing, housing, house furnishings and equipment, health, education, public utilities, money and credit, insurance and investments, and budgets.

The book deals with so many subjects that it is encyclopedic in form and suggests the early compendiums of information in the field of household economics.

Units dealing with food, clothing, housing, house furnishing and equipment have been much more adequately dealt with in regular home economics texts; but in a survey course on consumer education, these chapters should serve to arouse interest which would lead to further study. The units headed "Guides for the Buyer" and "Consumer Awareness and Protection" would be especially valuable to students in home economics classes.—SUSAN F. WEST, *Milwaukee-Downer College.*

How Heredity Builds Our Lives. By ROBERT C. COOK and BARBARA S. BURKS. Washington, D. C.: American Genetic Association, 1946, 64 pp., 75¢.

This interesting booklet is a popular publication presenting human genetics and eugenics in a very complete outline of the field. It is illustrated with excellent charts, plates, and pictures which in themselves tell the story of inheritance. The premise is made that "not by bread alone" does man live and that the social background—the customs, ideas, and ideals—in which we live affect our human development as well as heredity. The latter part of the book clears up several fallacies in popular belief concerning inherited factors and is well worth reading for those who are apprehensive concerning their qualities as parents and the future success of their offspring. An interesting discussion of world population is provocative and challenging to the scientist who is interested in the future population and what controls and aids would be necessary to ensure the best kind of people to build a better world. The authors suggest that those couples who are so fortunate as to be blessed with a good heredity hold the key to the future. The booklet might well be on every teacher's desk and can be recommended as a soundly written, beautifully illustrated, and brief treatise on heredity.—SUSANNE THOMPSON, *Louisiana State University.*

Food Buyers Information Book. By ALEXANDER TODOROFF. Chicago: The Grocery Trade Publishing House, 1946, 380 pp., $4.

This book, written in the question and answer style, gives answers to some 1600 practical questions about food and includes numerous drawings and photographs illustrating food products. In addition to giving suggestions for buying foods, each of the 50 chapters presents specific information on varieties, characteristics, grades, and labeling of food products.

Material in this book provides instructive information for anyone interested in food buying, preparation, and production and is a ready reference source for teachers and students.—BEATRICE DONALDSON, *Iowa State College.*

Introductory Mathematics for College Students of Home Economics. By MATILDA B. THOMPSON and A. GLENN HILL. Ann Arbor, Michigan: Edwards Brothers, Inc., 1946, 171 pp., $3.

This is a classroom-tested book, the outgrowth of a course given by the authors to freshmen in home economics. It is designed to pave the way for the use of mathematics in chemistry, physics, and home economics courses. The work is arranged to fit the needs of a one-quarter course aimed to give a vigorous review and a thorough understanding of the fundamental principles of arithmetic and algebra. Also one finds a brief consideration of plain geometry, sufficient treatment of logarithms to prepare the student for their use in chemistry and nutrition, and a particularly effective handling of elementary statistics.

The authors strive to present the material so as to insure maximum transfer value to other courses.

This is accomplished by the choice of illustrations and problem-solving situations directly in line with home economics student interests. Division and multiplication of fractions is taught by means of reduction or increase of actual recipes. Carry-over into physics and chemistry is stressed in the problems in the algebra section. Money management and banking come into the picture by way of applied problems.

The edition under review is a reprinting of the 1944 edition, with minor changes only. It is assembled as a manual with work sheets and problem spaces provided. The book is a metal-spiral-bound lithoprint between heavy leatherette paper covers. Page numbering in the table of contents makes an index unnecessary.—LEITA DAVY, *North Dakota Agricultural College.*

Creative Crafts in Wood. By MICHAEL DANK. Peoria, Ill.: Manual Arts Press, 1946, 200 pp., $3.

For the craftsman who likes light woodworking projects, this book furnishes fully illustrated and clearly described processes for coping saw work, wood stipple craft, wood chipping craft. The chapters on materials, tool requirements, designing projects, and preparing working plans are full of practical basic information.

The manipulative steps of procedure for the three different processes of woodcraft are clearly given in logical order. For each woodworking process described in this book an entire chapter is devoted to project patterns and designs and another to photographic illustrations of finished articles. Such finished articles as scrapbook covers, serving trays, book ends, wall brackets, costume jewelry boxes, tabourets, and coasters are shown in photographs. Suggestions for many other projects are listed.

A serviceable book for amateurs and professionals.—REBA ADAMS, *U. S. Extension Service.*

Modern Metalcraft. By JOHN L. FEIRER. Peoria, Ill.: Manual Arts Press, 1946, 288 pp., $3.50.

In this book Mr. Feirer presents logical and concise instructions for 33 techniques of working with metal. Each technique is applied to a practical project which an amateur as well as a professional craftsman can interpret with success. Copper, brass, galvanized iron, aluminum, and black iron are the chief mediums used.

Information and directions are well organized. The list of materials needed, the step by step procedure, and numerous illustrations facilitate logical manipulation on the part of the individual using the book as his guide.

The book is composed of information on materials and equipment, measuring stock, transferring a design to metal, cutting metal with a hack saw, cutting metal with hand snips, drilling and punching holes, cutting metal with a cold chisel, piercing metal, filing metal, bending sheet metal, bending heavy metal, bending a scroll, twisting metal, annealing metal, beating down metal, raising metal, doming metal, planishing metal, metal tapping, and making metal seams; also chasing, etching, plating, riveting, soft-soldering, hard-soldering, coloring, overlaying, and surface finishing of metal.

Craftsmen looking for real "How-to-do" information will find it here.—REBA ADAMS, *U. S. Extension Service.*

So You Were Elected. By VIRGINIA BAILARD and HARRY C. MCKOWN. New York: McGraw-Hill Book Co., Inc., 1946, 264 pp., $1.80.

How to get along with the people as well as the mechanics of the club are described in chatty, informal language that will appeal to the teen-ager. This book would be valuable help to any officer or adviser of high school club, Boy or Girl Scout troop, 4-H club, or other informal youth group.

Each officer finds one entire chapter in Part I devoted to his club responsibilities and the value of planning and preparing ahead. Such troublesome mechanics as minutes, parliamentary procedure, constitutions, and money management are described in simple terms. Each officer is shown how important is his own manner in encouraging others, as the way in which the president appoints the "clean-up" committee.

Part II suggests recreational activities that should stimulate young people to think of other ideas. Emphasis is on how to make plans and work them out successfully. Party suggestions for welcoming new members, for entertaining mothers and fathers, for football banquets, and for assemblies are given. The chapter on "Being Clubby" emphasizes activities valuable to club, school, and community. Excellent references are included.

An easy style and clever illustrations lead one to read on to the end of the book. It creates an enthusiastic desire to function actively in some club, either as a leader or as a follower.—WILMA C. BEYER, *Cornell University.*

Abstracts . . .

EDUCATION

Contributed by Eunice Jacobson and Ella J. Rose of the University of Minnesota

The present task of the humanities, W. G. LELAND. *School & Soc.* **64,** No. 1661 (Oct. 26, 1946), pp. 281–284.

The author has formulated the opinion that "the natural and physical sciences deal with man's environment. . .; the social sciences, with man in his association with other men; . . . the humanities . . . with the manifestations of his spiritual existence."

The humanities deal with ideas; and since wars begin in the minds of men, it is there that the defenses of peace must be constructed. This is also the task of the sciences and the social sciences, and all must work together; but the humanities are out in front. It is especially the task of the humanities to form and strengthen the social will for good.

Studies central to the humanities—language, literature, the arts, religion, philosophy, history—provide the most vital fields of work.—E. J.

Patterns of general education, L. JOHNSON. *Junior Coll. J.* **17,** No. 2 (Oct. 1946), pp. 45–52.

The American junior college is facing its greatest opportunity and also its greatest responsibility. Faculties inevitably will raise questions about the type of experiences and curriculums that shall be adopted. The important factor to recognize is that the student needs a general education. Agreement has been reached regarding the objectives, but there is wide divergence of opinion about how to achieve them.

Five approaches to general education which are used in American education today are described. The *great-books* approach emphasizes intellectual goals and achievements and omits all nonintellectual goals. This approach is best adapted to superior academic students. The *liberal arts* approach claims to best educate for the common life. The *survey* approach encourages students to see the relationship between fields of learning. Advocates of the *individual program* assert that preparation for the common life can best be attained when students work on materials and problems which they consider important. The fifth approach is through *functional subject matter* and is based directly on life needs of students.

Many colleges use a combination of two or more patterns. The writer advocates that the junior-college curriculum move toward the functional subject matter approach.—E. J.

Evaluation of teacher personality, P. M. SYMONDS. *Teachers Coll. Record* **48,** No. 1 (Oct. 1946), pp. 21–34.

Four personality factors are proposed as essential to succeed as a teacher: (1) liking for teaching through which personal goals and satisfactions are attained; (2) self-respect, dignity, courage as opposed to feelings of inferiority and inadequacy; (3) ability to identify himself with children; (4) emotional stability.

Schools of the future may call upon competent firms of psychological consultants to assess the qualifications of prospective teachers to determine the school level at which the candidate would function most effectively. Because certain aspects of personality change as conditions and experiences of life change this program should serve to guide the individual as well as aid the would-be employer.—E. J. R.

Teaching of international understanding, a report. *Educ. Leadership* **4,** No. 1 (Oct. 1946), pp. 11–18.

At the world conference of the teaching profession held in New York in August 1946 recommendations were made to teachers and teachers associations of all nations concerning the teaching of some subjects, international study of teaching practices, extension of literacy, relations among students of different countries, teacher travel and exchange, educational uses of modern media of mass communication, work of a central office of documentation and exchange of materials, research, experimentation, and evaluation. The importance of co-ordination among the several subject fields and grade levels must be kept constantly in mind.—E. J. R.

FAMILY ECONOMICS—HOME MANAGEMENT

Contributed by Dorothy M. Greey of Michigan State College and Margaret L. Brew, Lillian J. Fincher, and Edith Belcher Shepherd of the Family Economics Division, U. S. Bureau of Human Nutrition and Home Economics

Current business methods in the teaching of marketing, A. N. WATSON. *J. Marketing* **11,** No. 2 (Oct. 1946), pp. 181–183.

The teachers of marketing have a dual job: (1) They must keep themselves fully informed to a greater extent than ever before regarding shifting trends in merchandising methods, and (2) they must be ready to make almost immediate application of this new and current material to the classroom. It is very time-consuming for the teacher to collect all the material. Most teachers do not have access to the great volume of research, advertising, and promotion pieces released by American business and which have limited or specialized circulation. New channels must be created to augment the existing flow of information from business to the teachers of marketing. The research department of the Curtis Publishing Company is attempting to make available comprehensive reports of available information. Such reports include *Cooperation in the United States, Urban Housing Survey, Markets and Quotas, Where People Buy.* Copies of various types of releases such as these are sent to teachers along with requests for information on the future type of information they would like to have.—D. M. G.

The nature of the distribution cost problem, Q. F. WALKER. *J. Marketing* **11,** No. 2 (Oct. 1946), pp. 151–158.

Proposals for the reduction of distribution costs, a major question with which students of marketing are concerned, include (1) the need for better cost accounting, (2) reduction in time wastes, (3) reduction of wastes at point of origin, (4) determination of the responsibility of cost reduction. Marketing costs present many more practical difficulties than factory or production costs. The most difficult task is the allocation of joint costs. If practical ways of determining true selling costs could be developed, there would be much opportunity for more efficient merchandising. Where retail prices are fixed under fair trade laws, there is no possibility of passing on to the consumer any economies that more scientific costing might permit. While it is difficult to differentiate properly between time and place utilities in marketing, the emphasis for the need of increased tempo in marketing is not intended to obscure the place savings that improved transportation will also make possible.

Poor styling, like poor design, may result in inadequate sales and high selling costs. It is not unusual for an avalanche of customer adjustments to be precipitated simply by the failure to furnish proper instructions for the care and use of the product. This is a perennial source of additional operating costs for the retail merchant. The services that the public demands, the necessary complexity of our economic processes, and the costs of economic freedom are seldom properly appraised. In short, if we are to make progress in reducing marketing costs, there must be broader understanding of the highly complex nature of the problem and the relative responsibility of the producers, distributors, and consumers for these costs. The ideal conditions for economical marketing costs are described in detail.—D. M. G.

The national food allotment program, R. SCHICKELE. *J. Farm Econ.* **28,** No. 2 (May 1946), pp. 515–533.

The National Food Allotment Program is a proposal (1) to improve nutrition by making it possible for low income families to purchase adequate diets and (2) to assist in maintaining fair farm prices and incomes by expanding and stabilizing the effective demand for food. The effect on nutrition, the effect on farm prices, the cost of the program, the relation to other agricultural programs (including school lunch), fiscal policy aspects, determination of basic food allotments, coupon system, educational program, effect on incentives for work, illegal transfer of coupons, and application to farm families are all discussed. The Food Allotment Program would substantially increase the effective demand for many farm products above what it would be without the program and would therefore help to reduce underemployment in agriculture and to increase the national income.—D. M. G.

Advertising branded parts to consumers, N. H. BORDEN. *Harvard Bus. Rev.* **25,** No. 1 (Autumn 1946), pp. 129–144.

Over the next few years one of the interesting phases of the battle of the brands undoubtedly will be an effort by many manufacturers of fabricated

materials and parts used in consumer's goods to build a reputation for their brands at the ultimate consumer level. Their objective will be to influence the manufacturers of the finished goods to use their particular branded materials and parts in place of those which either are less well known or are not labeled at all. The opportunity to advertise and promote fabricated materials and parts to good advantage at the consumer level seems to turn on the following factors; namely, significant new product ideas, merchandise to meet a real consumer need, significant differentiation from other products, and sizable promotional funds.

As the reputation for finished goods brands becomes firmly established, their manufacturers appear less inclined to rely and trade upon the reputation of fabricated materials used or brands of parts. "The moral is: It is a difficult job to establish brand reputation for fabricated parts and materials at the consumer level. It can be done; that is clear. But it can only be done when circumstances are favorable and care and foresight are exercised by manufacturers."—D. M. G.

"Bag boomerang." *Bus. Week* No. 888 (Sept. 7, 1946), pp. 47–50.

In recent years the use of dress-print feed sacks has been adopted by practically every flour and feed manufacturer in the country. Dress-print feed sacks were first used about 20 years ago, but not until 10 years ago did the practice become widespread. Last year bag manufacturers delivered approximately 100,000,000 dress-print bags. Of the Class A and B cotton sheetings and osnaburgs set aside for flour and feed bags this year it is estimated that 15 to 20 per cent will be dress-printed, about seven times as much as before the war.—M. L. B.

Doubled volume, lowered cost, by work simplification, C. V. Giaimo. *Factory Mgt. & Maintenance* (Aug. 1946), pp. 146–149.

A summary of the principles of work simplification used by the Lionel Corporation for double the prewar dollar volume of sales. Not so long ago the burden of such a project would have fallen on the sales force; the problem today is one for production men and methods engineers. Eight applications of the principles of work simplification are illustrated by photographs.—D. M. G.

A further analysis of food selections of 80 families in Lubbock, Texas, M. W. Lamb and M. T. Corrington. *J. Am. Dietetic Assoc.* 22, No. 2 (Feb. 1946), pp. 134–138.

Eighty family dietaries collected in the spring and summer of 1942 and spring of 1943 were used in this analysis, 63 having been included in a previous study and classified as to nutritional quality and 17 not previously studied. Market orders representing foods consumed by each family were analyzed to determine food selections which were tabulated for the 63 families previously studied by dietary class and for all families by income level and occupation of family head.

Foods selected uniformly by all families included meat, potatoes, eggs, shortening, granulated sugar, and refined cereals. Greatest variation was found in the selection of such protective foods as fruits, fresh and canned vegetables (other than potatoes), whole grain cereals, butter, margarine, and milk. The best food selections were made by the professional group. Income level, occupation, and accustomed dietary quality all affected food selections. Other factors are mentioned as affecting family food selections but are not included in this analysis.—L. J. F.

Instructions on processing for community frozen food locker plants. Production and Marketing Admin., U. S. Dept. Agr. Misc. Pub. No. 588 (March 1946), 52 pp.

With an increase in community locker plants there has come a demand for accurate information on what foods to freeze and how to freeze them. This publication covers the selection and preparation, the packaging and freezing, and the thawing and cooking of a variety of fruits and vegetables, as well as meats, poultry, fish, eggs, cooked foods, and some miscellaneous products.

Included also are a partial list of manufacturers of supplies for frozen food lockers and a bibliography of selected references.—E. B. S.

Fellowships in Health Education Offered

Fellowships with a value of $900 for advanced study in health education are announced by the U. S. Public Health Service, Federal Security Agency.

FAMILY RELATIONS AND CHILD DEVELOPMENT

Contributed by Katharine M. Maurer of the University of Nebraska

Development of speech during infancy: curve of phonemic types, O. C. IRWIN and H. P. CHEN. *J. Exptl. Psychol.* **36**, No. 5 (Oct. 1946), pp. 431–436.

Utterances of 95 babies under 30 months of age were recorded by use of the International Phonetic Alphabet. The number of phonemes at each of 15 two-month intervals for the entire group and for 35 babies on whom the most continuous records were available yield curves which approach a parabolic arc and for which mathematical formulas have been derived. The babies progressed from 7.5 phonemes at 2 months to 27 phonemes at 30 months. Thirty-five phonemes are found in adult speech. Greater progress was made during the first year than in the year and a half that follows. Girls exceed boys in phonemes after the first year, but the difference is slight.

The relation of emotional adjustment to intellectual function, J. L. DESPERT and H. O. PIERCE. *Genetic Psychol. Mono.* **34**, First Half (Aug. 1946), pp. 3–56.

This investigation sought (1) to determine whether any relation can be established between emotional adjustment as shown by the total record (including case history material, reports of physical examinations, daily behavior observations, and mechanically recorded individual play sessions) of preschool children and the intellectual function as determined by mental tests and (2) to learn whether variations in IQ and in emotional adjustment are parallel.

Records of 39 children at Payne Whitney Nursery School, who had been tested at least twice on the 1937 revised Stanford-Binet test under ideal conditions, were analyzed. Test results and records of social and emotional adjustment were analyzed independently. Records were divided into two groups: Group I, records of 22 children with changes in IQ of more than 10 points, and Group II, records of 17 with changes of less than 10 points.

In Group I increases in IQ were paralleled in every case with increased social and emotional adjustment. Decreases also were associated with emotional difficulties in all cases. In 6 cases conflicts involving siblings were present.

Prediction on the basis of the total record was less conclusive for Group II, where the changes in IQ were less than 10 points. In 6 of the 17 cases there was disagreement between social and emotional adjustment and test results.

Conclusions: intellectual function does fluctuate in preschool children; emotional adjustment influences their mental test scores; a projective test given during the same period is needed to aid in the interpretation of mental test data.

Auditory changes in children from ages ten to eighteen, M. L. REYMERT and M. ROTMAN. *J. Genetic Psychol.* **68**, Second Half (June 1946), pp. 181–187.

The 173 children, total population of the Mooseheart community between 10 and 18 years of age, were tested on or near their birthdays on the Sonotone Audiometer. The study was to determine the auditory threshold at these ages in order to learn: (1) at what age auditory acuity reaches a maximum; (2) if there are sex differences in auditory acuity, and if so, if pubescence accentuates these differences; (3) whether a relationship between auditory and developmental level exists, and if so, if skeletal age is a better index than chronological age.

The children were divided into three chronological age groups and three skeletal age groups. Auditory acuity reached a maximum at the pubescent period—ages 13 to 15 inclusive. At these ages boys have better acuity for low tones, and girls have better acuity for high tones. Skeletal age groupings give essentially the same results.

An attempt through the use of experimental techniques to determine the effect of home assignments upon scholastic success, W. E. ANDERSON. *J. Educ. Research* **40**, No. 2 (Oct. 1946), pp. 141–144.

Two groups of junior high school students, equated on the basis of a mental test and enrolled with the same teachers for algebra, English, and social studies, were tested. No home work was assigned to one group; the other had daily assignments in each subject. Tests were given at the end of each five units of work.

Home study improved scholarship in all three subjects. The control group was sporadic in achievement. Bright students in the control group did not gain so much as those in the home study group. Differences in achievement between average and dull students favored the home study group markedly.

FOODS

Contributed by Mina W. Lamb, Texas Technological College

Stored frozen stock produces better preserves, H. H. THOMPSON, S. R. CECIL, AND J. G. WOODROOF. *Food Ind.* **18,** No. 9 (Sept. 1946), pp. 73–75.

Workers report no perceptible change in either color or flavor of strawberry jam held for 15 months at 0° F and suggest that a frozen fruit mixture with added acid and pectin may be made into a jam or jelly in one minute to give a product of good color and flavor.

No change in quality of preserves was noticed after storage at 0° F for 15 months. Preserves made from frozen or canned fruit had a slight loss in color and flavor but less than products made from fresh fruit. Fruits stored as long as 24 months still gave excellent preserves.

Proper packaging protects frozen meats, J. ZIEMBA. *Food Ind.* **18,** No. 11 (Nov. 1946), pp. 102–104.

Certain salient facts about meat varieties and cuts, together with physical properties of packaging materials, are needed before packaging materials can be properly evaluated.

Cold, dry air, enclosed in packaged frozen meats, preserves the quality of properly packaged frozen meats stored in sub-zero freezers but is a hazard to original freshness, flavor, appearance, and nutritive value of frozen meats that are carelessly or improperly packaged.

Essential to effective packaging of frozen meats is moisture protection, because excessive moisture losses take place from poorly packaged products held in low-temperature storage rooms. Dehydration of frozen meats, or "freezer burn," begins on the surface and progressively penetrates into the interior of the product. Loss of moisture can be prevented by using packaging materials possessing low moisture-vapor transmission rates, by proper wrapping and sealing, and by adequate low temperature storage with minimum fluctuations.

The retention of thiamine and riboflavin in beef cuts during braising, frying and broiling, R. E. TUCKER, W. F. HINMAN, AND E. G. HALLIDAY. *J. Am. Dietetic Assoc.* **22,** No. 10 (Oct. 1946), pp. 877–881.

Thiamine and riboflavin content of 4 cuts of beef before and after cooking was determined and the vitamin retention determined. Total retention of thiamine in meat and drippings depended on cooking time: braising retained 61 per cent, broiling 80 per cent, and frying 90 per cent. Riboflavin retention was approximately 100 per cent in all methods.

Drippings from braising contained on the average 21 per cent of the thiamine and 26 per cent of the riboflavin; those from broiling contained 7 per cent of the thiamine and 5 per cent of the riboflavin.

Orange juice delivered by milk man, E. MAULDIN. *Food Ind.* **18,** No. 11 (Nov. 1946), p. 105.

Twelve typical towns in the South are serving as test areas for selling fresh citrus fruit juices. The juice sold has the flavor and 90 per cent of the vitamin content of freshly extracted orange juice. It is extracted daily by a Florida company, deaerated, deoiled, sterilized, concentrated under high vacuum at low temperature, packaged, and cooled in one continuous operation. The concentrate, in gallon cans, keeps indefinitely when stored at 45° F or lower.

To reconstitute the concentrate it is added to cold water, agitated, cooled, aerated, put into containers, and delivered. This juice has 99 per cent of the vitamin C present in fresh oranges and 90 per cent of all food elements.

Sanitation in foods departments, W. L. MALLMAN. *J. Am. Dietetic Assoc.* **22,** No. 10 (Oct. 1946), pp. 870–873.

Statistics of the U. S. Public Health Service vividly depict the need for sanitation in food service. It is reported that 285 epidemics occurred in 1943 due to disease transmission by food and food handling. There were 13,938 cases of illness and 33 deaths.

This article deals primarily with means of measuring sanitation in food establishments for use of sanitarians and operators. Experiments have been set up to evaluate washing and sanitizing procedures under practical conditions.

It is desirable to subject dishes to a temperature lethal for disease-producing bacteria irrespective of the numbers present on the plates.

The operator in food establishments must supervise each step. Good sanitation involves proper selection of quality food, proper storage and cooking, sanitary cleaning and handling of food utensils, maintenance of good refrigeration, and proper sanitary handling in food service.

HOUSING

Contributed by Edith L. Allen of Delavan, Illinois

Houses or politics? Factors that will determine the volume of construction, T. S. HOLDEN. *Architectural Record* **100**, No. 5 (Nov. 1946), pp. 92–95.

During the next five years construction activity will be larger perhaps than in any previous five-year period in this country's history. The question is, what role will the federal government play? Present controls are effected under three legislative enactments, all due to expire in 1947 unless extended. The Civilian Production Administration expires on March 31, 1947; building material price control, under OPA, June 30; and the special powers granted the housing expediter under the Patman Act, December 31, 1947. The author urges that government controls be quickly abolished and predicts that "producers and builders will begin to reduce costs just as soon as prices can get a workout in free competitive markets, as soon as labor in the plant and on the job sites will deliver a day's work for a day's pay."

How to get along with your architect, Z. STEELE. *House Beautiful* **88**, No. 11 (Nov. 1946), pp. 204, 232–233.

An architect is a practical businessman with designing ability, expert knowledge of construction methods, materials, equipment, costs, financing, and building laws. However, architects vary in ability in these lines. To find an architect suited to your taste, tour your community, note the houses you like best, then find out who designed them. Visit offices of architects and look at pictures and plans of houses they have designed. Learn all you can about designing and planning a house before hiring an architect. Do not expect hours of discussion and planning before you hire him. Know what you want first and what is practical. Give him a carefully thought out list of what you want and what you do not want and a picture of the needs of your family. Make all important changes in preliminary sketches, then abide by your decisions.

Rain: The roots of your house don't need it, D. R. KOCH. *Better Homes & Gardens* **25**, No. 3 (Nov. 1946), p. 26.

To sum up the subject: Control the water that causes trouble; fill pools and depressions where water collects; build up and tamp the earth against the foundation walls to make water run away from it.

Radiators vs. panel heating, T. N. THOMPSON. *Plumbing & Heating J.* **117**, No. 10 (Oct. 1946), pp. 56–60.

The public wants precision heating in every room. There are places in which radiators serve best; others where panel heating is most satisfactory; still others where both are desirable. Rooms with floors directly on the ground should have heating panels in the floor, supplemented by heated baseboard or ceiling panels or by radiators. Rooms with heated places below them are made comfortable by conventional radiators or by wall or ceiling panels.

Radiant panel heat with copper tubing, EDITORS. *Practical Builder* **11**, No. 11 (Nov. 1946), p. 26.

How soft copper tubing is used in panels for heating floors, walls, and ceilings is explained. A table shows that floor panels heat most like the convection radiator systems, that ceiling panels most closely conform to the true radiant principle of heating. Conventional steam, hot water, and air systems carry convection components ranging from 70 to about 90 per cent effectiveness.

How to shop for a new refrigerator, C. E. CONWAY. *House Beautiful* **88**, No. 13 (Oct. 1946), pp. 142–145+.

Illustrations of 11 different manufacturers' models of 1946 refrigerators are shown with 19 pictures and captions. In these, emphasis is put on the various crispers for vegetables, on shelves that may be drawn out, and on special freezing units. Some shelves are hinged in the middle or in two places so that sections may be dropped to accommodate large articles. Most of the shelves are coated or plated with anozinc, stainless steel, glass, or plastic. Deep freeze storage space in household refrigerators is large enough to hold enough food to last the average family but two or three weeks at the most. To expect it to be a substitute for a family-size home freezer, even when there are two-temperature controls, is not advisable. Meat is "safe" when kept in a meat-keeper for only a short time as compared to its quality when kept in a regular freezer locker. Fiberglas is commonly used as the insulating material.

INSTITUTION ADMINISTRATION

Contributed by Blanche Tansil of the University of Mississippi

Our system of cleaning venetian blinds, J. J. WENNER. *Coll. & Univ. Bus.* **1,** No. 4 (Nov. 1946), pp. 28–29.

The University of Cincinnati has a simple mechanical system for cleaning its 825 venetian blinds. The blinds are first hung on a special movable rack in the cleaning room and inspected and repaired. They are then sprayed, soaked, and washed in a large tank, where the temperature of the solution is maintained at 135° F by means of steam. After rinsing, the blinds are allowed to hang stretched out until dry.

Pictures and detail drawings of the equipment are shown. The cleaning solution consists of 10 to 20 parts of water to one part of liquid all-purpose soapless cleaner.

Accounting in the kitchen, T. TYSON. *Coll. & Univ. Bus.* **1,** No. 4 (Oct. 1946), pp. 32–33.

Operating statements for a given period should be reduced to percentage figures for better comparison between periods. Some residence halls base budgets on a unit cost per meal served. Daily control of food cost is essential for giving customers best returns for money spent and indicates to the manager the general trend of the food cost over the whole period. Typical statements and reports are shown.

The prevention of employee accidents in the school lunchroom, W. PENDERGAST and R. LEANDERSON. *What's New in Home Econ.* **11,** No. 2 (Oct. 1946), pp. 110–111+.

Records of 860 accidents in the public school cafeterias of Detroit were analyzed and grouped. Percentages for each group were: falls, 31; cuts, 22; burns, 13; falling objects, 7; strains, sprains, and bruises, 9; and electrical shock and miscellaneous accidents, 18.

Management is responsible for keeping equipment in the best possible working condition, for regular safety inspections, for instructing employees in safety practices, for keeping records on accidents, and for having an emergency plan.

Good work habits and safety should be taught employees on the job. Adequate supervision is necessary.

College union standards. *Coll. & Univ. Bus.* **1,** No. 4 (Oct. 1946), pp. 19–22.

The Association of College Unions has prepared standards for the training, experience, and salaries of employees. The Union directors should hold the same status and have a salary equal to those paid in other major divisions or departments of the college.

Typical positions are grouped under two functional headings: the educational and the business and administrative. Desirable qualifications for all positions are outlined.

Meat for the special party, J. A. CLINE. *Am. Restaurant Mag.* **30,** No. 11 (Nov. 1946), pp. 43–46.

Requirements which must be met in selecting meat for a party are: (1) it must be universally liked; (2) it must be one which can be well prepared and properly served for the number necessary with the equipment, space, and help available; (3) it should be one that can be "stretched" should the group increase at the last minute; (4) it should keep satisfactorily for use the next day if the number dwindles after the food is prepared; (5) if just right when served, it must be one that can be prepared after the guests arrive or held for some time if the party is late; (6) it must be one that can be attractively and quickly served; (7) it should be cooked slowly at low temperature so that overcooking is avoided. Stretch it well with plentiful extenders and serve and garnish it with a flourish.

Why restaurants fail. *Am. Restaurant Mag.* **30,** No. 10 (Oct. 1946), pp. 27–44+.

Reasons for restaurant failures were explored by means of an opinion survey. Lack of knowledge and misguidance resulting from false impressions of big and easy money for a small investment cause 50 per cent of all restaurants to fail within the first year. Numerous comments and opinions of leading restaurant operators offer guidance to those who contemplate entering this field.

AHEA Extends Greetings

School Food Service Association has emerged from amalgamation of Food Service Directors Conference and National School Cafeteria Association.

NUTRITION

Contributed by E. Neige Todhunter of the University of Alabama

Diet of mother and hydrocephalus in infant rats, L. R. RICHARDSON and A. G. HOGAN. *J. Nutrition* **32**, No. 4 (Oct. 1946), pp. 459–465.

Experimental rats were raised on a synthetic diet containing all the vitamins except vitamin B_6. At maturity these animals were mated. A total of 1,756 normal young were weaned from these females. There were also 30 young with hydrocephalus; only two of this group survived till weaning at 28 days.

In another group of females raised on the same synthetic diet plus 5 per cent of a liver extract fraction there were no cases of hydrocephalus.

The incidence of hydrocephalus in 2 per cent of the young is considered to be the result of some unknown nutritional deficiency.

The utilization of calcium in soybean products and other calcium sources, L. J. SCHROEDER, W. A. CAHILL, and A. H. SMITH. *J. Nutrition* **32**, No. 4 (Oct. 1946), pp. 413–422.

Thirteen male students served as subjects for 20-day experimental periods, and a total of 49 balance periods were studied. Subjects were first brought to a negative balance on a calcium-poor basal diet; in the experimental period the basal diet was supplemented with calcium in the form of soybean "milk," cooked whole soybeans, evaporated milk, or calcium sulfate.

The calcium intake on the basal diet varied from 153 to 276 mg daily, depending on the calorie intake; and the supplementary calcium consumed ranged from 319 to 795 mg daily.

The average utilization of calcium in each supplement under experimental conditions was evaporated milk 29.1; calcium sulfate 23.7; soybean "milk" 22.6; whole cooked soybeans 10.4.

Cooked whole soybean is not a good source of dietary calcium and also when fed in large quantities it interferes with the utilization of other dietary calcium.

The pyridoxine content of tissues of rats fed various diets, E. C. SHEPPARD and E. W. MCHENRY. *J. Biol. Chem.* **165**, No. 2 (Oct. 1946), pp. 649–655.

Groups of rats, 70 to 100 gm weight, were fed diets of varying protein content and different levels of pyridoxine. Weight increases were observed and pyridoxine content of liver, kidney, and muscle tissues determined.

When the diet contained pyridoxine the concentration in the liver increased in direct proportion to the protein content of the diet; 25 micrograms of pyridoxine daily appeared sufficient to give maximal liver concentration.

Inhibitory action of certain amino acids on chicks receiving nicotinic acid-low diets, A. C. GROSCHKE and G. M. BRIGGS. *J. Biol. Chem.* **165**, No. 2 (Oct. 1946), pp. 739–740.

Nicotinic acid is believed to be concerned with the metabolism of amino acids, particularly of glycine, arginine, and alanine. When chicks were fed a basal diet plus glycine, growth was inhibited and symptoms of blacktongue were observed. Addition of nicotinic acid corrected the condition. Mixtures of arginine, glycine, and alanine also inhibited growth.

Canities and alopecia in children associated with avitaminosis, preliminary report, A. P. CHAVARRIA, L. GOLDMAN, C. SAENZ-HERRERA, and E. CORDERO-CARVAJOL. *J. Am. Med. Assoc.* **132**, No. 10 (Nov. 9, 1946), pp. 570–572.

Infants and young children in Costa Rica living on a diet consisting chiefly of bananas and molasses showed marked changes in the hair. The hair becomes dry, loses color, and becomes loose. These disturbances are believed to be directly associated with vitamin deficiencies.

The condition in children can be cured if the diet is made adequate. The addition of biotin was thought to accelerate the return of the hair to a normal condition.

The adequacy of intravenous partial acid hydrolysates of casein and fibrin for nitrogen balance in dogs, D. V. FROST and W. C. RISSER. *J. Nutrition* **32**, No. 4 (Oct. 1946), pp. 361–373.

Adult dogs were maintained on a highly purified nonprotein diet. The protein hydrolysates were given by injection in the leg veins. Experimental periods were of 7 days each.

Dogs which had been in nitrogen equilibrium lost weight rapidly when receiving casein hydrolysate and were in severe negative balance; addition of cystine gave no benefit. When fibrin hydrolysate was given there was a small negative balance and some weight loss. The suggested explanation is that the cystine or methionine of the casein is not completely utilized.

SOCIAL WELFARE AND PUBLIC HEALTH

Contributed by Helen G. Everett and Laura Schoeborn, members of the Social Welfare and Public Health Section of the District of Columbia Home Economics Association

Arkansas teaches her midwives, M. O. HALE. *The Child* **11**, No. 4 (Oct. 1946), pp. 66–69.

Because there are approximately 700 midwives with no permit in Arkansas who deliver more than 2,700 babies each year, a teaching program has been developed. A field nurse midwife organizes classes which give the fundamental principles concerning equipment and care of the midwife's bag; filing of birth certificates; conditions upon which the midwife accepts a case; prenatal care, including diet; delivery, postpartum, and newborn care. Some of the more difficult problems which must be met in teaching midwives is the age level (60 to 80 years), inability to read or write, superstitions, and religious beliefs. Many of the midwives believe that deliveries must be made on the floor instead of a bed. Others think that God gives them all the help they need and that it is unnecessary to take further instruction. Part of the course includes education of the community on the need for trained midwives.

The final solution to the midwife problem will be adequate medical and hospital facilities to give maternity care. However, even qualified nurse-midwives are scarce and poorly paid. At present the best that can be hoped for is to weed out the worst of the midwives and extend training and supervision for those remaining.—H. G. E.

The malaria problem today, J. J. SAPERO. *J. Am. Med. Assoc.* **132**, No. 11 (Nov. 16, 1946), pp. 623–627.

Much benefit was gained from wartime experience and research which is of benefit in controlling malaria. The Pacific type of malaria due to Plasmodium vivax is different from the American form of malaria and requires different types of drugs for treatment. With the introduction of DDT an attack could be made on both larvae and adult mosquitoes. Heretofore only the larvae had been destroyed. The use of a repellent for malaria control was found ineffective because any measure which relies on individual initiative is usually ineffective. However, available repellents are effective if trouble is taken to use them. Quinacrine hydrochloride was found to be superior to quinine. This knowledge has important implications for present-day malaria control in civil communities. The entomologist was a key person in malaria control, but teamwork on the part of all workers was the most important factor in rapid control.—H. G. E.

Recognition and treatment of early vitamin deficiency states. *J. Am. Med. Assoc.* **132**, No. 10 (Nov. 9, 1946), pp. 558–561.

Because of decreasing frequency of frank vitamin deficiencies, attention has been focused on subclinical avitaminosis. In diagnosing deficiency states a careful physical examination and medical history is necessary to determine whether or not there is an underlying disturbance leading to faulty absorption and utilization or increased metabolism. If no underlying factors are discovered, the possibility of an inadequate diet may be looked for as the next possible cause. General laboratory findings are of little help when patients have early vitamin deficiencies. For patients with mild deficiencies the therapeutic trial has been used. That is, vitamins have been administered and if the symptoms clear up, the suspected diagnosis would appear to have been sound. The basic treatment for primary deficiencies is to teach the patient to eat a diet that is adequate.—H. G. E.

Medical service plans across country, W. P. DEARING. *Am. J. Public Health* **36**, No. 7 (July 1946), pp. 769–776.

An estimated 10 million persons are covered by some type of prepaid medical service. Existing plans include 5 main groups: commercial insurance, industrial, private and consumer sponsored, medical society, and rural. Some general features of various types of medical service plans are discussed. Types vary according to population covered, services rendered, costs and financing, organization of services, and utilization. Financial aspects are of chief concern rather than quality and efficiency of care and there are many areas and groups not now served. Best and cheapest care is furnished by group practice units. The APHA and President Truman have recommended insurance combined with general taxation. Obligatory enrollment of population, improved organization services, and federal financial support can achieve a widespread distribution of modern medical service on a prepaid basis.

TEXTILES AND CLOTHING

Contributed by Hazel Van Ness of The Stout Institute, Menomonie, Wisconsin

No rubber required in elastic cotton fabric. *Textile World* **96,** No. 10 (Oct. 1946), p. 129.

An elastic cotton fabric which does not contain rubber has been developed by the textile division of the United States Rubber Company. Known as Strex, the new fabric is intended for use in slip covers, surgical bandages, gloves, and wearing apparel but is not designed for use in girdles and foundation garments.

Elasticity is achieved by twisting cotton yarn into the shape of a coil spring. Control of the twisting process permits various degrees of elongation to be obtained.

Vat printing, R. C. GEERING. *Rayon Textile Monthly* **27,** No. 10 (Oct. 1946), pp. 85–89.

Vat colors find wide application in the printing of textile fabrics mainly because of their superior all-round fastness properties.

Vat colors are available in a complete range of shades and can be mixed with each other in any proportion; this is of special importance in patterns calling for fine shading. Their only deficiency is the fact that they are not quite so brilliant as certain basic colors, acid colors, or naphthols. Vat colors are adaptable to many fabrics and styles of printing, including application, discharge, and resist. Vat colors are especially useful for printing blended fabrics.

Vat colors are not more generally used because the cost is considerably higher both in the price of the colors themselves and in their application. Equipment needed represents a considerable investment and calls for considerable space.

Vat printing colors are available in paste and powders. For draperies fastness to light is of chief consideration; for shirting fastness to chlorine bleaching and caustic boiling.

The manufacture of velon monofilaments, G. ROWLAND. *Rayon Textile Monthly* **27,** No. 10 (Oct. 1946), pp. 64–66.

Velon monofilaments are manufactured from a powdery resin which is a copolymer of vinylidene chloride and vinyl chloride. This resin mixed with plastizer and stabilizer is melted at a temperature of 330° F and extruded from orifices in a die into a cooling water bath. The filament so produced is stretched on rolls and then woven.

Colored Velon is produced by incorporating colored materials into the powdered resin before the extrusion process. Velon is the most nonabsorptive plastic known; hence it will not dye and will not stain.

Velon fabrics have been subjected to severe service tests. Velon screening used in the South Pacific resisted mildew, fungus, and corrosion. Velon fabrics used in taxicabs, busses, passenger cars, and railway coaches were nonflammable, resistant to wear, and easy to clean.

Quartermaster research program offers attractive careers to scientists, J. JACOBS. *Rayon Textile Monthly* **27,** No. 10 (Oct. 1946), pp. 53–56.

Some outstanding accomplishments of research under the direction of the Quartermaster Corps and in co-operation with industry illustrate the program made during the war to maintain the well-being of the soldier. These include more adequate water-repellant clothing, a method for providing artificial rainfall for testing clothing, ways of testing clothing while it is being worn, and an outline of what clothing may be expected to do for men exposed to extreme cold. The Quartermaster Corps at the beginning of the war was faced with the huge task of equipping an army for global and mobile warfare. An advisory board of over 200 men was organized, consisting of explorers, climatologists, geographers, physiologists, physicists, and men from industry.

Now the research and development branch is to be the eyes, the ears, and the technical brain which will help to keep the Quartermaster Corps up to date on developments that will not only add to present knowledge of how to care for and better equip the soldier but will put the Corps in a position to make important contributions to civilian requirements.

Cotton for Japan and Germany. *Rayon Organon* **17,** No. 10 (Oct. 1946), p. 163.

A program provides for the export of government-owned cotton to Japan and Germany. The purpose is to facilitate the rehabilitation of the cotton-textile industry in these countries as well as to use their textile capacity to provide much-needed cotton textiles for devastated areas in other parts of the world.

News Notes...

News General

AVA's New President. Florence Fallgatter of Iowa State College became the first woman president of the American Vocational Association at its meeting in St. Louis from December 4 to 7, 1946.

Nobel Prize Winner. Emily Green Balch of Wellesley, Massachusetts, economist and worker in international women's organizations, was co-recipient of the Nobel Peace Prize this year with Dr. John R. Mott, Orlando (Florida) evangelist who has helped found five world federations. Miss Balch was a member of the AHEA from 1910 to 1915.

AHEA's Representatives. Eloise Davison of the New York Herald Tribune Institute was AHEA's official representative at the inauguration of Sarah Gibson Blanding as president of Vassar College on October 11, 1946, and Mary L. Matthews of Purdue University was the Association's representative at the inauguration of Thomas E. Jones as president of Earlham College on November 23, 1946.

Golden Anniversary Conference and Workshop. A Home Management Conference and Workshop will be held at Michigan State College from June 30 to July 18 as part of the golden anniversary celebration of the founding of home economics at the College. A general conference will be held the first week, and workshops in special phases of home management the second. Anyone may attend the first week and not the succeeding two weeks. Attendance will be limited.

Nebraska

Nebraska Home Economics Association. At a board meeting called in Lincoln on November 23 by the president, Anna Smrha, plans were made for a campaign to raise funds for a permanent hea l-quarters for the AHEA. Teresa Libershal of Lincoln is chairman of the committee.

Plans were also made at the board meeting for the annual state meeting on February 28 and March 1 in Hastings. May Cook of Grand Island is program chairman, and Dorothy Withers of Hastings is general arrangements chairman.

The high light of the meeting will be a "recruitment" program. High school girls interested in home economics will be invited to attend a program on opportunities for careers in home economics.

The HEIB group and the college instructors will hold separate meetings on February 28, preceding the general meeting.

The Buffalo County Home Economics Club, which meets at Kearney, is starting its seventh year. One of the few county organizations still functioning in the state, it has had an increase in membership each year until now it approaches 50. At the November meeting Ruth Leverton of the University of Nebraska discussed "What Is New in Nutrition."

Farmers Home Administration. The immunization and vaccination of all children of FHA families is a goal toward which all FHA home supervisors are working this year. Methods of accomplishment are generally on a group basis and varied to fit local county conditions. Special attention is being given to existing health problems and to preventing others through better nutrition and sanitation.

Fall Homemaking Conference. Lydia Swanson of Iowa State College assisted with the teaching of child development at the annual Fall Homemaking Conference.

Radio Series. A series of five broadcasts, prepared by homemaking teachers to bring about better understanding of the vocational home economics program, were put on the air during September and October over 8 stations.

Nebraska Association of Future Homemakers of America. District conferences were held throughout the state this fall.

New Mexico

Eastern New Mexico College. Maria Friesen, formerly of Kansas State College, became instructor in clothing and related art in August.

The home economics department is conducting a supervised period each week for veterans' wives at which time they use sewing equipment and receive help with clothing problems.

State Nutrition Committee. A new pamphlet "If Baby Could Talk" is being printed for distribution in New Mexico. It is also available in Spanish.

The Committee is co-operating with the Production and Marketing Administration in conducting

an experiment on the use of dry skim milk in four school lunch programs.

School Lunch. The New Mexico Department of Public Welfare and the Production and Marketing Administration are co-operating in bringing the school lunch to 173 public schools serving 23,000 children of high school grade and under. In most of these schools a "complete" lunch is served. Further expansion of the program is indicated by the plans of these two agencies in connection with those of the Department of Public Health and the State Nutrition Committee to introduce use of the highest quality of dried skim milk for both beverage and cooking purposes in four "pilot" projects. Reception of the product will determine further expansion of this program to other schools in the state that do not have access to a fresh milk supply.

State Department of Vocational Education. Leadership training conferences for officers of the Future Homemakers of America were held during the fall in seven of the eight districts in New Mexico.

Extension Service. Zola Frances Watkins, recently of the WAVES, is the new home demonstration agent in Socorro County.

Agnes Vinyard, who did newspaper work in Clovis and Tucumcari prior to enlisting in the WAC, has been assigned to Colfax County.

Home extension agents met at State College from December 3 to 6 for an intensive course in work simplification. Dorothy Simmons, extension specialist in work simplification, assisted with it.

Farmers Home Administration. At a conference held in October for county home supervisors emphasis was placed on housing, in connection with Farm Ownership homes, for both World War II veterans and nonveterans.

From January 1 to October 31, 1946, about fifty FO loans were made in the state. It is the policy of the Administration to obtain adequate housing standards in new and remodeled construction, adequate bedrooms, and built-in kitchen cabinets with time-saving arrangements. Experimental landscaping programs are being worked on with some families.

New York

Russell Sage College. Mrs. Josephine Rigg, formerly of Keene Teachers College in New Hampshire, has been named head of the School of Home Economics.

Jean L. Goodman, former teacher at Fort Ann (N. Y.) Central School, and Mrs. Carolyn Roberts, formerly of Skidmore College, are new staff members.

State Education Department. As the result of a request to the Bureau of Home Economics Education from Dr. Conroe, assistant commissioner in charge of higher education in the department, a study of the Institute of Nutrition and Dietetics at the University of Montreal was made by Treva E. Kauffman, acting chief of the Bureau; Naomi Voegele, supervisor of the Bureau's school lunch program; Evelyn Herrington of Syracuse University; Hazel Hauck of the New York State College of Home Economics; Jessie Cole, former nutritionist in the New York State Department of Health and past president of the New York Dietetic Association. The Department had been requested to make suggestions for further development of the Institute.

The Bureau of Home Economics Education has approved Hunter College and Adelphi College as institutions to assist in training teachers of home economics for the state of New York.

Miss Kauffman presented a paper on planning modern kitchens for homemaking instruction at the annual Home Service Development Conference of the New England Gas Company.

In connection with the curriculum workshops held last summer at New York University, Cornell University, and Syracuse University a committee prepared a questionnaire that was sent to about 800 home economics teachers who were asked for their opinion on use of the course of study monograph issued several years ago and for suggestions on a new guide and course of study.

Helen Diehl and Mrs. Grace Hunt were recently appointed supervisors of the school lunch program.

New York State Association of Future Homemakers of America. Lois Groff, state FHA president, sent a letter to the 100 chapters in the state calling attention to the program of work adopted at the state meeting in Morrisville, which included a fund to be raised for a scholarship to enable an FHA girl to attend a college or one of the state technical institutes; a fund to be raised for a summer camp; and the sending of friendship boxes and letters to boys and girls in war-devastated countries. Each club has selected one country to help.

North Carolina

North Carolina Home Economics Association. Officers elected at the annual meeting in Raleigh on October 25 and 26 were: president, Ella Outland, Duke Power Company, Burlington; vice-

president, Myrtle H. Westmoreland, Statesville; secretary, Mildred I. Morgan, Asheville; and treasurer, Verona Lee Joyner, Greenville.

Eastern Carolina Teachers College. Mary Poindexter of Kingsville, Texas, is the new head of the home economics teacher education department.

Department of Public Instruction. To secure information on the kind of program being promoted and sponsored by local boards of education, Muriel Brown of the U. S. Office of Education in October visited North Carolina centers in which family life education co-ordinators are employed.

Extension Service. Ruth Current, state home demonstration agent, is on leave this year for study at Teachers College, Columbia University.

Estelle Smith retired on December 1 after almost 32 years of service in the extension field. For the past five years she had been assistant to the state agents.

Mary Thomas, specialist in foods and nutrition, retired on September 30 after 20 years of service in the extension field.

Officers of the North Carolina Home Demonstration Agents Association elected at the recent annual extension conference in Raleigh are: president, Velma Beam, Clay County; vice-president, Mrs. Eugenia Van Landingham, Edgecombe; secretary, Nell Kenneth, Guilford; and treasurer Gladys Hamricks, Polk.

Lois Rainwater, president of the National Association of Home Demonstration Agents, presided at the Association's annual meeting at the Stevens Hotel, Chicago, from December 2 to 7.

Farmers Home Administration. The home management supervisors held a meeting to prepare for the annual check up and the county meetings of farm ownership families.

North Dakota

North Dakota Home Economics Association. At the annual meeting in Fargo on October 24 Ancel Keys of the University of Minnesota made a report on the starvation experiment on conscientious objectors conducted at the University, and Stanley Kuffel, state supervisor of occupational information and guidance, gave a demonstration on "Counseling of Students."

At the luncheon, Leita Davy, councilor of the Association, reported on the Cleveland meeting of the AHEA.

Officers elected were: president-elect, Esther Frendburg, State Department of Public Health; vice-president, Louise Bane, State Teachers' College, Valley City; secretary, Emily Reynolds, North Dakota Agricultural College; and treasurer, Astrid Erickson, North Dakota Agricultural College.

Minot State Teachers' College. Irene Wood of Minneapolis is a new staff member.

North Dakota Agricultural College. Helen Boettcher, a new member of the home economics staff, is in charge of the home management house.

University of North Dakota. Victoria Brust of Ohio is a new member of the food and nutrition staff.

State Department of Education. Vera Alderson, a graduate of the University of Washington who received her master's degree in family life education from Cornell University, is the new assistant state supervisor of homemaking education.

Ohio

Ohio State University. The fiftieth anniversary of the School of Home Economics was celebrated on November 1 and 2.

The Friday program included an Open House and tea; a dinner for official representatives at which Gladys Branegan, director of the School, presided; and an evening convocation, presided over by President Howard L. Bevis, which included a talk on "Women's Role in a Democracy" by Mrs. Dora S. Lewis of Hunter College, former president of the AHEA, and the conferring of an honorary degree on Edna Noble White of the Merrill-Palmer School.

The Saturday program included morning and afternoon sessions presided over by Faith Lanman Gorrell, former director of the School of Home Economics, and devoted, after greetings from Dean John F. Cunningham of the College of Agriculture, to a symposium on "A Look Ahead in Family Life." Esther McGinnis, assistant director of the Merrill-Palmer School, served as chairman.

Contributors to the symposium were Muriel W. Brown of the U. S. Office of Education, who spoke on "Interdependence of Home and Community"; Robert Foster of the Merrill-Palmer School on "The College Graduate and Family Relationships"; Marjorie M. Heseltine of the U. S. Children's Bureau on "An International Approach to Family Health and Nutrition"; Deane G. Carter of the University of Illinois on "The Home Economist and the Housing Problem"; and Eloise Davison of the New York Herald Tribune Institute on "Homemaker's Headlines." Helen Mougey Jordan presided at the alumnae reunion luncheon.

A reception at the President's House closed the celebration.

HEIB Appointment. Marcella Grace Liebeck joined the staff of the Westinghouse Home Economics Institute last summer as central supervisor with headquarters at the Mansfield plant.

Oklahoma

Oklahoma Home Economics Association. At the October 11 meeting 61 Farmers Home Administration home supervisors in Oklahoma met to organize their department in the Association.

Oklahoma A & M College. The Home Economics Club is selecting and purchasing books and teaching materials for two Japanese schools in which Japanese women are being trained for domestic help and work in food units by Captain Rachel Johnstone, a former student and faculty member now stationed in Tokyo as assistant mess officer of General Headquarters and nutritional consultant. The club received $300 from Captain Johnstone to be used in purchasing the books and materials.

The department of hotel administration has 19 men students representing all parts of the United States.

Oklahoma Baptist University. The home economics department has moved from cramped basement, quarters to roomy ones on the first floor. The new quarters include a small apartment-type kitchen and two home kitchens with modern equipment a workroom for clothing construction which has several new machines, and a complete new laundry with the latest equipment.

University of Oklahoma. A budget consultation service for servicemen's families is being established by the School of Home Economics. Advice and help may also be obtained on other home management problems.

The home economics classes with no College prerequisites that are being recommended to servicemen's wives are proving popular.

The new curriculum in home furnishings will include a course in the decorative crafts and their use in the home, including planning color schemes; a course on planning a budget for furnishing houses on the various levels; and a course on the retailing of furnishings, with store experience planned. These courses are in addition to the beginning ones in Home Furnishings, Renovation of Furniture, and Consumer Problems.

Extension Service. Mrs. Leta Moore, formerly home demonstration agent in Osage County, became family life specialist in the state on August 1. Mrs. Moore spent the past year studying at Oklahoma A & M College and at Iowa State College.

Farm and Home Week. What's new in farm and home equipment, rural electrification, and health and housing were major points of emphasis during Farm and Home Week on the Oklahoma A & M campus from July 30 to August 2.

Five mobile health units were on the campus and every homemaker present had a chest x-ray made. Also, throughout the week all of the women had access to the blood-test facilities.

Claude Wickard and Louisan Mamer of the REA discussed an expanded Rural Electrification Administration program.

Dr. C. P. Rhodes, director of Memorial Hospital in New York City and chairman of the National Research Council committee on growths, discussed the need for an extensive education program on cancer control.

Oregon

Oregon State College. Dean Ava B. Milam and Mrs. Azalea Sager, state extension leader, have compiled a two-year curriculum on extension work for junior and senior home economics students. Special courses in methods, radio, and journalism are included. A feature of the course will be the opportunity for senior students to obtain on-the-job experience in the counties while receiving college credits.

Extension Service. The county home demonstration staff has been increased since July 1 to provide 27 full-time agents. New counties added this year are Clatsop, Benton, Crook, Hood River, Malheur, Douglas, Lincoln, and Morrow. Full-time assistants have been appointed in Washington and Lane Counties, and an assistant who is also assistant 4-H leader devotes one-third of her time to Marion County.

Appointments to the state staff include: Mrs. Irma Little, family life specialist; Jean Williams, recreational specialist; Mrs. Mabel Mack, assistant state leader; Mrs. Myrtle Carter, former agent-at-large, now specialist in clothing and house furnishings; and Mrs. Edith Freeman, agent-at-large to work on the small farm program.

Lucy Lane, clothing specialist, is on sabbatical leave for graduate study at Columbia University. Mrs. Marjorie Tye White served as acting clothing specialist until January.

Mrs. Lois Lutz Brundage has resigned to make her home in Coos Bay.

Pennsylvania

Drexel Institute of Technology. Mrs. Edna Brandau, head of the department of applied art, has been granted six months' leave.

Madeline Burleigh, an alumna who was recently food supervisor at the Colonnade Cafeteria in Philadelphia, has been appointed head of the institution administration division of the College of Home Economics.

Florence Dorward, formerly director of the Nutrition Service Bureau in Springfield, Massachusetts, has joined the staff to teach courses in family economics.

Mrs. Laura Lou Frank, '46, has been appointed instructor in foods and nutrition and is taking part-time graduate work.

Lois Helman is a graduate assistant in foods and nutrition while working for her master's degree.

Janet Irwin, a senior, is assistant to Lillian Hack, dormitory dietitian.

Mrs. Mary McCue has been appointed director of the Grace Godfrey Home Management House. She is also doing graduate work.

Agnes Neylan, formerly of the University of Maryland, has been employed to teach foods and nutrition.

Mary Schell, formerly of Michigan State College, is assistant professor in applied art.

Mrs. Curtis Bok, former head of the religious education department at Stephens College, spoke on "Marriage, a Co-operative Enterprise" at the fall home economics assembly on November 14. The assembly was followed by a luncheon in honor of Mrs. Bok. Florence Dorward and Golden Lacy were the faculty co-chairmen.

The home economics faculty entertained the Philadelphia HEIB's at a buffet supper on November 4 in the faculty club rooms. Russell Binzer of the staff discussed the co-operative plan in home economics at Drexel. Madeline Burleigh and Marjorie Sims were the faculty chairmen. Students in the quantity cookery courses prepared the meal.

Puerto Rico

Puerto Rico Home Economics Association. Puerto Rico home economists, facing the problems of scarcity of all supplies (food needs being the most pressing) and inflation, are recruiting all efforts to find ways and means of meeting needs.

The Association's twentieth annual meeting has been scheduled tentatively for July 1947. A survey of home economists' needs is being sponsored by the executive committee of the Association. Findings will be used as a basis for promotion of the year's program of work, which has "Meeting Your Needs" as its theme.

Puerto Rico Nutrition Committee. The Committee has planned to give demonstrations and prepare exhibits on food values and other nutrition themes for annual meetings and conventions of organized groups. The first nutrition exhibit was displayed in the Puerto Rico Medical Association Building in San Juan during the Medical Association's annual meeting in December.

Rhode Island

Rhode Island Home Economics Association. Each of the general meetings this year will center around one of the major subject matter fields. At the December 5 meeting "The Textile Industry" and "Recruiting for Home Economics" were the subjects discussed. "Family Life and Nutrition" will be the subject of the March 27 meeting. Regular meetings are being held to acquaint all officers and chairmen with the AHEA program.

Olga P. Brucher, president of the Association, spoke at the fall meetings of the New Jersey and Vermont Home Economics Associations.

Rhode Island State College. The freshman enrollment is the largest to date. Home economics freshmen from the Providence center will be transferred to the campus for the spring semester.

Services to veteran students' families include a "well baby" clinic under joint auspices of the School of Home Economics, the College Health Service, and the South Kingston Visiting Nurse Association. Classes in clothing and food management have been started for veterans' wives. Laboratories are open, and the staff is available for consultation or help on home furnishing problems.

The Nursery School has extended its services to include afternoon play groups.

To provide faculty housing accommodations and food service, the College is operating the historic Kingston Inn as a faculty club this year.

Extension Service. "Coat schools" have been of primary interest in the fall clothing program.

An all-day Christmas meeting for leaders was planned in one county. The morning session was devoted to a demonstration of sugar-shy and sugarless candies, cookies, puddings, and breads; after luncheon there was a fashion show of attractive, inexpensive children's and adults' coats; and the afternoon session was devoted to a lecture

demonstration by Norman Butterfield on Christmas decorations and the use of greens.

School Lunch Program. The federal school lunch program is being administered in Rhode Island this year by the State Department of Education. Elizabeth S. Ferguson is state school lunch supervisor, and Mabel Bargamian is her assistant. Commitments have already been made for all federal funds available, and there is a waiting list of several schools.

South Dakota

South Dakota Home Economics Association. Margaret McEniry, president, called a council meeting at Brookings on December 14. Esther Aalseth is chairman of the program-of-work committee.

South Dakota Education Association. The meeting of the home economics division of the Association was held at the Washington High School, Sioux Falls, on November 25. Esther Short, president, led a discussion on classroom experiences in homemaking.

Officers elected were: president, Betty Hayter, Mitchell; first vice-president, Mildred Tischer, Pierre; second vice-president, Ruth Sickles, Madison; secretary-treasurer, Reva Anderson, Webster.

Extension Service. The South Dakota Federation of Home Demonstration Clubs held its annual meeting in Pierre on November 22 and 23.

Mrs. Vivian P. MacFawn, who has had 17 years' experience as home demonstration agent and three years as nutrition specialist in Michigan, is the new assistant state leader. She will supervise agents in the southern part of the state.

Liivu Salmi, recently on overseas duty as an American Red Cross recreation worker, has joined the staff as home demonstration agent.

Texas

Texas Technological College. Geraldine Clewell is on leave to work toward an advanced degree at Ohio State University.

Mayme Twyford, who was on leave during 1945–46, has returned to the staff.

New members of the division of home economics include Mrs. Pauline Keyes, instructor in clothing and textiles; Faye Hattox, instructor in food and nutrition; Lola Marie Drew, assistant professor in home management; Charlotte Ballow, assistant professor in child development; and Martha Graves, associate professor in home economics education.

Forty-six boxes of Christmas gifts for children in war-devastated areas were prepared by the Home Economics Club.

The cafeteria was opened this fall under the supervision of the food and nutrition department. Opal Wood supervises the cafeteria and teaches institutional management classes.

Extension Service. Lorene Stevens, Smith County home demonstration agent since 1944, became 4-H club specialist on December 17. She is in charge of girls' 4-H club work.

Alice A. Wheatley, recently with the Army Medical Corps, will be assistant 4-H club specialist.

Mrs. Myrtle Dickie Negy, recently home demonstration agent in Dawson County, has been appointed district home demonstration agent. She will supervise home demonstration work in 20 of the west Texas counties in Extension District 6.

Tina Stewart, formerly Bell County home demonstration agent, has been appointed district agent for Extension District 12.

Edith Lois Wilson, Floyd County home demonstration agent for seven years, has been appointed assistant district agent.

Mrs. Adele R. Hooker became extension librarian on October 1. She succeeds Mrs. Lilla Graham Bryan, who recently resigned.

Vermont

Vermont Home Economics Association. "Broadening the Home Economics Horizons in Vermont" was the theme of the fall luncheon meeting. Olga Brucher of Rhode Island State College, president of the Rhode Island Home Economics Association, was the principal speaker. Her talk was followed by a symposium in which the following Association members, engaged in the fields of home economics indicated, took part: Grace Miller, dietetics; Charlotte Beatty, extension service; Susan Merrow, research; Mrs. Catherine Herron and Mrs. Mary Pearl, business; Mrs. Elsie Wallis, homemaking; Milla Newland, public health. Mary Bresnehan represented the student clubs.

Representatives from the student club at Middlebury College and at the University of Vermont were invited to attend this meeting.

New officers for 1946–47 include president, Marianne Muse; second vice-president, Mrs. Elizabeth Robins.

State Department of Education. Marion Brown, formerly assistant supervisor of homemaking education, has been appointed supervisor to succeed

Helen LeBaron, who resigned to become assistant director of home economics at The Pennsylvania State College.

Vermont Council of Homemaking Teachers. The five members of the Council, representing by geographical districts 78 homemaking teachers, met for the second year to make plans for district meetings to sponsor friendship among neighboring schools and to discuss teaching difficulties.

Extension Service. Edna Sommerfeld, clothing specialist, spoke on "The Modern You" before the Vermont High School Homemaking Club in Barre. Members of the group modeled right and wrong attire for different occasions.

Pittsford. Inez Bernor, formerly with the Production and Marketing Administration, is now dietitian at the Pittsford Sanitarium for Tuberculosis.

Virginia

Virginia Home Economics Association. Plans are being made for the annual meeting in Roanoke on March 21 and 22. Housing, consumer interests, research, and recruitment of home economists will be featured on the program.

Eastern Virginia District. Principal speaker for the District's meeting in Petersburg on December 7 was Mrs. Helendeen Dodderidge of the Production and Marketing Administration.

Northern Virginia District. The fall meeting of the Northern District was held at Madison College on November 9. The speakers were Mrs. Guy Moffett, vice-chairman of the Advisory Committee on Ultimate Consumer Goods of the American Standards Association, and Lois Burman, nutritionist for the eastern area of the American Red Cross.

Mount Vernon Homemakers' Section. At its November meeting, the section welcomed back to the United States a homemaker member, Mrs. Roberta Kraemer, who with her husband had just returned from a year in Sweden. Mrs. Kraemer discussed Swedish customs and food habits.

Averett College. As the result of a survey made to determine the home economics needs of the student body, the curriculum was revised to meet the needs of those preparing for family living. A child development class is now being offered and a local nursery used for a laboratory. A course in family living and marriage has been added, and the students participated in December in a three-day marriage institute sponsored by the Community Social Hygiene Association and directed by Gladys H. Groves.

A new home economics department is being planned as a postwar project.

College of William and Mary. The home economics students voted on October 28 to discontinue membership in a national fraternity and to reorganize into a home economics club affiliated with the AHEA.

Madison College. Dorothy Raggli, who received her MS at the University of Tennessee, is a new staff member. She will teach textiles and clothing.

Radford College. M'Ledge Moffett is the Virginia representative on the national study of the recruitment of home economics teachers. Last summer she distributed the instruments prepared by the national committee to a representative group of Virginia teachers. These have been tabulated, and the results were considered at the committee's meeting in St. Louis on December 1 and 2.

Dr. Moffett is also a member of the Commission for Teacher Recruitment recently appointed by the Virginia Education Association to study the teacher shortage in Virginia.

Virginia Polytechnic Institute. A clothing and grooming clinic for non-home-economics students is being sponsored one afternoon a week for eight weeks by home economics seniors interested in clothing and nutrition. Individual consultations are held.

Washington

Institutes for School Lunch Cooks. The Washington Home Economics Association is co-operating with the State Department of Public Instruction for the third year in organizing on a county basis institutes for school lunch cooks. Demonstrations on quantity cookery, kitchen planning, menu planning, and sanitation are included.

Seattle. Vera Alderson, assistant in the department of home economics in the Seattle Public Schools, has gone to North Dakota as assistant state supervisor of home economics education. Josephine McAllister has succeeded her.

Seattle home economists are planning three all-city meetings this year. Seattle teachers, both public school and University of Washington, sponsored the January meeting on opportunities and responsibilities of teachers in the field of education for better family living.

HEIB's. A dinner meeting climaxed the HEIB's active campaign for annual operating

expenses. Mrs. May Klock of the Seattle City Light and her staff served dinner for the group of 100, representing all local home economics groups. Better public relations and increased membership are the HEIB's goals for the year.

Spokane. At the last meeting of the Spokane Home Economics Association, Mrs. Lucille Ramirez of the Washington Water Power Company, with the assistance of her staff, served dinner for 52 home economists in her demonstration kitchen.

Spokane home economists, in conjunction with the YWCA, are working on an adult education project for local war brides. A home economist meets with them each week and explains the various local agencies available to help them with homemaking.

Plans are under way for a field day for high school girls when they will be taken through various home economics departments and told of positions in the field.

Harriet Brigham, REA home economist for the seven western states, spoke to the Spokane home economics teachers on November 20.

Wisconsin

Milwaukee-Downer College. The home economics alumnae study group was entertained at dinner in the home economics department by Susan F. West on November 21. Afterwards five alumnae described new business positions which they are holding.

Miss West participated in a panel discussion of "The Influence of the Home and School and Their Relation to the Program of Social Agencies" at the regional conference of Girl Scout leaders.

Mount Mary College. Sister Mary Albert is vice-president of the new National Catholic Home Economics Association.

University of Wisconsin. A Careers Conference for Women Students was held at the University on November 20 and 21. The keynote speaker was Congresswoman Emily Taft Douglas, who spoke at a general meeting on November 19.

Speakers and topics of special interest to home economics students were: Karen Van Derzee of the Lawrence Selz Organization, who spoke on "Public Relations and Promotion: the Woman's Angle"; Marguerite Faber, executive designer for the Martha Manning Company, who spoke on "Fashion Design"; Margaret Kuehne of the University of Wisconsin, "Child Development"; Dorothy Wilcox, manager of the job analysis division of Schuster's, "Merchandising"; Marian Neprud, regional training officer for the FPHA, "Housing"; Dorothy McCluskey, curriculum coordinator for the Wisconsin Department of Public Instruction, "Education"; and Frances Kline and Edith Clark on the "Pro's and Con's of Teaching."

State Board of Vocational and Adult Education. A special class for foreign brides has been arranged for in Eau Claire.

Costume millinery has been a popular homemaking unit in recent years in the city vocational schools. Madison Vocational School reports that 162 women have registered for this unit, offered in four adult evening classes and five adult day classes, and that 125 are on the waiting list.

The state family life circuit program in city vocational schools of the state was offered this past semester in Beloit on Monday; Kenosha on Tuesday; Port Washington on Wednesday; and Neenah and Appleton on Thursday. Friday was scheduled as the teacher area day, devoted to follow-up work, consultations, and preparation of materials.

Extension Service. The annual state extension conference was held in Madison the week of December 9. Speakers included Edmund de S. Brunner of Columbia University; Elin Anderson, health specialist, U. S. Extension Service; Dr. Carl N. Neupert of the Wisconsin Board of Health; and the following from the University of Wisconsin: Helen White, national president of the AAUW and member of the United States commission of UNESCO; John Gaus, professor of political science; and Asher Hobson of the agricultural economics department.

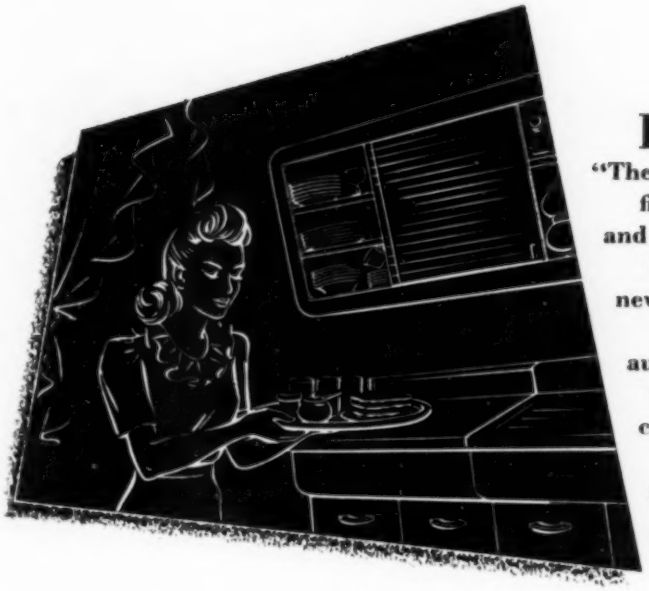
Farm and Home Week will be held May 26 to 28.

An Outlook Conference was held in Madison on January 20.

Farmers Home Administration. Home supervisors have tested the gauges and safety valves of almost all of the cookers owned by Wisconsin FHA borrowers.

Mildred Stratton, home supervisor in Burnett, Washburn, and Sawyer Counties, conducted for FHA borrowers a series of meetings on sanitation.

Wanted: names and addresses of home economists now in foreign lands—Americans there and foreign fellows who have studied here in the last five years. Send to the editor of the JOURNAL OF HOME ECONOMICS.



In the March issue of "The Kitchen Reporter" you will find reports of important research and the conclusions of three of today's authorities pioneering the new and rapidly developing field of work simplification. One guest author deals with dish-washing . . . another with home canning . . . and the third with ease of kitchen work. A fourth article, from Kelvinator Kitchen, suggests simple but highly effective kitchen conveniences.

Read the Latest in *Work Simplification*

Factors Affecting Ease of Kitchen Work

DR. MARVIN E. MUNDEL

Kitchen arrangement . . . utilization . . . and personal habits as they affect ease of kitchen work are discussed by Dr. Mundel, Associate Professor of Industrial Engineering, Purdue University.

Work Simplification Applied to Dishwashing

DR. ELAINE K. WEAVER

Having scientifically analyzed dish-washing, Dr. Weaver, Assistant Professor in Home Economics, Teachers College, Columbia University, suggests practical ways to simplify this common household task.

A Time and Motion Study in Home Canning

JEAN LINDEMAN

Work simplification's value in home canning is emphasized by Miss Lindeman who based her Master's thesis at Iowa State College on a home canning study.

Kitchen Conveniences To Save Time and Steps

JOAN ADAMS

The conveniences suggested by Miss Adams, Director of Kelvinator Kitchen, are easy to incorporate in any kitchen—and what a saving of time and steps!

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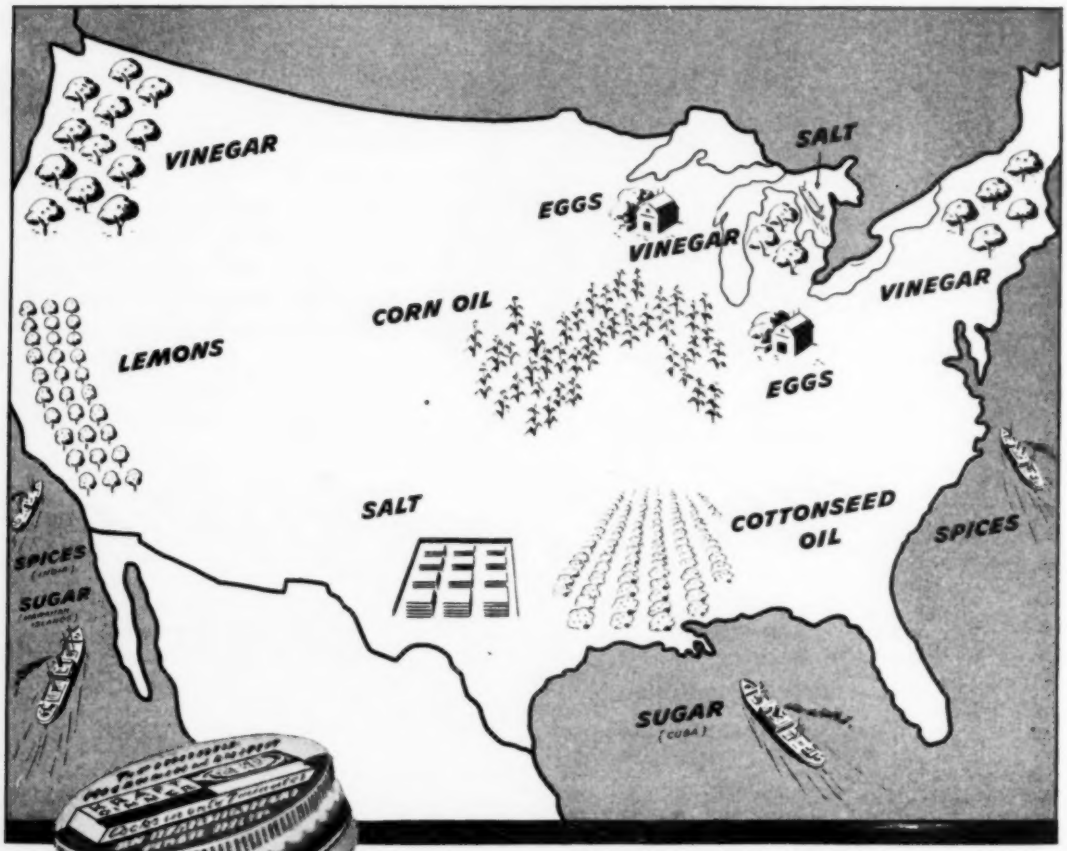

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For instance, the making of a comparatively simple product such as mayonnaise keeps an endless modern caravan constantly on the move. This is particularly true when each ingredient is painstakingly selected for high quality as is the case with Kraft Mayonnaise.

The oils for Kraft Mayonnaise, chosen for flavor, color and purity, begin in the warm, green cornfields of the great Middle West—in the snowy cotton belt across the South.

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Salt comes down thru the stormy Great Lakes by boat, or crosses the continent by train; and pungent, flavorful spices travel the oceans of the world from the Orient and the Tropics to American harbors.

Sugar must be shipped from as far away as the Hawaiian Islands or Cuba.

Then, when mayonnaise has the final crowning touch (which Kraft Mayonnaise has) of *fresh lemon juice*—the citrus groves of California complete the picture.

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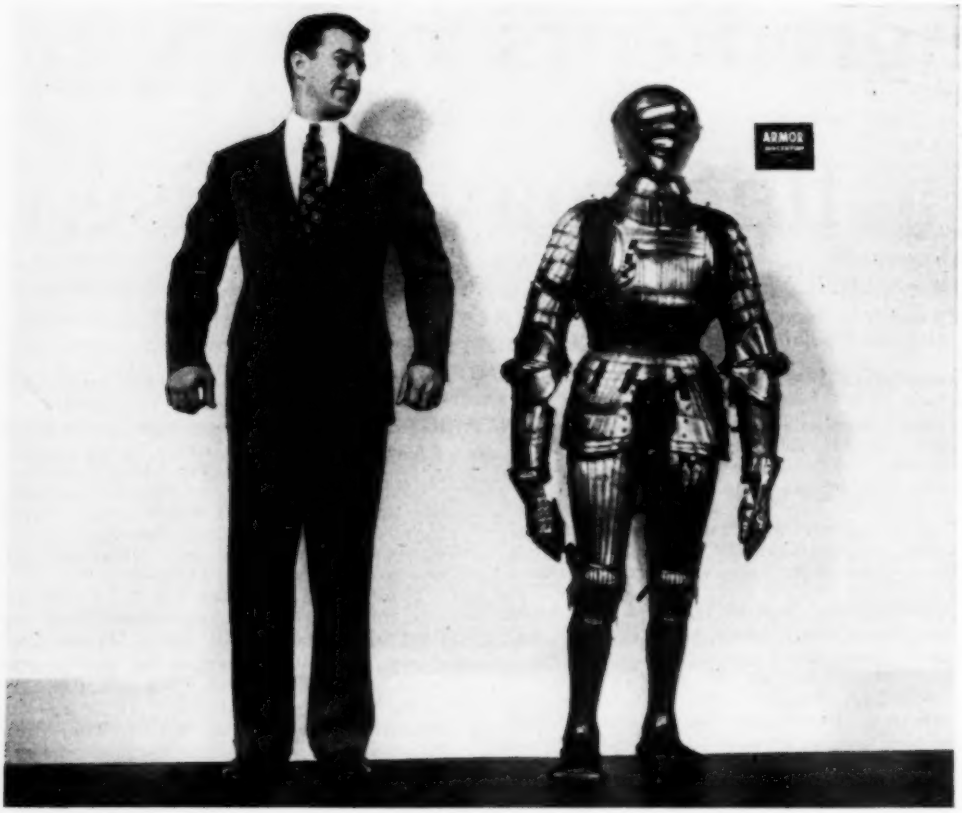
CONTINENTAL SALAD BOWL. In separate sections of a salad bowl place watercress, lettuce leaves, curly endive, cooked peas, raw cauliflower tips and cooked kidney beans Serve with a bowl of julienne Kraft American Cheese and a bowl of Kraft Mayonnaise.

SHRIMP AND TOMATO SALAD. Peel tomatoes and cut each in half crosswise. Place them on a serving plate, and on each tomato-half place five whole shrimps. Add a generous amount of Kraft Mayonnaise to each salad. Surround with watercress and fill center with stuffed olives.



The shell of our former selves!

Stand the average American man next to a knight of old, and you'll discover a surprising fact. By modern standards, our iron-clad ancestors were pretty undersized!

The human race has grown appreciably since medieval times. But the real news is how rapidly it's grown *recently*. For instance, the soldier of World War II—according to Selective Service figures—topped his 1917 counterpart by almost a full inch!

This gain is largely due to the things we've learned about *food*. It's a very tangible result of research in vitamins, minerals, proteins—the myriad complex food substances which help build sound bones and tall, straight bodies.

Because *so many* of these vital substances are found in nature's most nearly perfect food—milk—National Dairy scientists are able to make a unique contribution to the sum of nutritional knowledge.

Behind them is a great organization—and many specialized talents—teamed up to turn National Dairy research into more and better foods for your table. And these, in turn, help advance the health of America. Just watch the *next* generation!

Dedicated to the wider use and better understanding of dairy products as human food . . . as a base for the development of new products and materials . . . as a source of health and enduring progress on the farms and in the towns and cities of America.

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By
Laurene Hempstead
formerly of the faculty of
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● For every type figure and for every occasion, the author explains and analyzes just the right technique of dressing to express the individuality of the wearer. She shows how to emphasize ones best features, how to conceal figure defects, how always to maintain a well-groomed appearance.

Dress problems for all ages are carefully treated in the revised edition of this standard fashion course. New material on accessories has been added, and the chapter on color has been amplified to include a valuable discussion of color as a basis for wardrobe selection.

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These two courses will cover all areas of Home Economics

For Summer School Bulletin J and Folder, write

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By HENRY C. SHERMAN. A vitally important study of human nutritional needs and the new achievements in production, distribution and use by which those needs can be satisfied. Based on recent experiments and wartime experience, it is a volume of particular value to physicians, dietitians and leaders of relief and welfare agencies.

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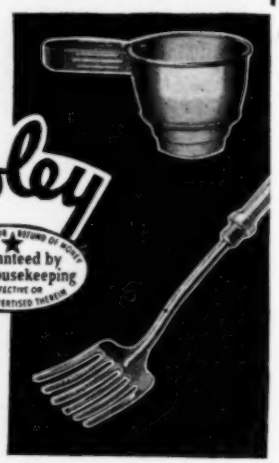

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The versatile Foley Fork blends pastry, mixes cakes, tosses salads, smooths gravies. Easy-cleaning stainless steel, 11 inches long, with prongs turned edgewise for quick cutting. Price 39¢.

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Guide to Good Butter

In making most of her food purchases, the average homemaker can easily determine whether or not she is getting good quality. She can usually see the quality of the meats, vegetables, fruits, she considers buying.

In buying butter, however, she faces a much more difficult problem. All butter looks pretty much alike, and the homemaker cannot be sure of getting good quality from the appearance of the butter itself.

This is another reason why it pays the homemaker to look for the paraffined carton in buying butter. The paraffined carton is the preferred carton for butter of top quality. It is a reliable buying guide . . . the identification of the manufacturer or distributor by which the homemaker chooses a brand of butter with the assurance of guaranteed, uniform quality always.

Why the Best Butter is Packaged in Paraffined Cartons—

1. Preserves quality and flavor.
2. Keeps out undesirable odors.
3. Protects perishable body and texture.
4. Gives better sanitary protection and prevents crushing.
5. Reduces moisture loss.
6. Convenience in handling.
7. Guards against rancidity.
8. Provides brand identification and assurance of quality.

Paraffined Cartons are also used in packaging Ice Cream, Margarine, Lard, Shortening, and Frozen Foods

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THE BEST BUTTER IS PACKAGED IN *Paraffined* CARTONS

Should teachers of girls explain menstruation?

Nobody has a better opportunity than a teacher to talk to the girls in her charge about menstruation. Many of your pupils may not know its meaning. Others want advice about exercise and baths at that time. Or about the internal Tampax method of sanitary protection which is sweeping the colleges of the country.

Hereby offered *free* is some excellently arranged material on the subject. This includes the instruction manual, "How Times Have Changed," a modern, well-illustrated book backed by medical authority. Also interesting and informative booklets for students.

The Tampax method appeals to the young because it discards the external pad with its belt and pins. Invented by a doctor, Tampax is made of pure absorbent cotton encased in applicators. There is no odor or chafing. Easy to use. Readily disposable because it has only one-fifteenth the bulk of the ordinary napkin when in use. . . . State your requirements on the coupon.

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JHE-27-D

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THE CONSUMER'S ECONOMIC LIFE, by Graham and Jones. A simply written, vividly illustrated presentation of practical, common-sense principles that the student can use easily and effectively in managing money and in buying and using a wide variety of goods and services. Exclusively listed by the Indiana State Board of Education for consumer service classes in Indiana schools. 1946 publication.

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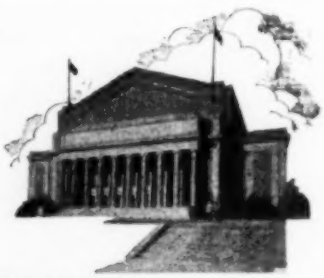

MINNESOTA SUMMER SESSION

HOME ECONOMICS

***First Term,* June 17-July 25, 1947**

Courses in home economics are planned primarily for advanced undergraduate and graduate students. The offerings will include the following fields: foods, nutrition, clothing and textiles, related art, home management, and home economics education.

***Second Term,* July 28 - August 29, 1947**

A Workshop in Evaluation will be given for college teachers of home economics. See Summer Session Bulletin for details.

For complete information write the Director of Summer Session, 804 Administration Building.

UNIVERSITY OF MINNESOTA
MINNEAPOLIS 14, MINNESOTA

BY Mary I. Barber OF KELLOGG'S

WHAT GOOD IS "GOOD NUTRITION" — ON THE SHELF?

Director of Kellogg's Home Economics Department Battle Creek, Michigan

BREAKFAST is such a hurry-up meal today that our big problem is getting food off kitchen shelves and into families every morning.

When I was a girl, it was the custom to eat a substantial morning meal. Come what may, Mother always put a hot cereal in front of us. This was quite a chore because there were five of us children to feed and get off to school every morning.

Fortunately, ready-to-serve cereals like Kellogg's Corn Flakes came on the market. And we children loved them! Mother did, too. She was no home economist but she realized at once that this new kind of cereal was not only quick and easy to serve, but nourishing.

MOTHER KNEW BEST

How right she was! Ounce for ounce, Kellogg's ready-to-eat cereals provide the same fuel value as cereals you have cooked yourself. Furthermore, all the Kellogg cereals either are made from the whole grain or are restored to whole grain nutritive values of thiamine, niacin, and iron.

Mother used Kellogg's Corn Flakes only as a breakfast cereal, but if she were alive today, I know she'd be cooking with it. She always liked to try new recipes, and our Kellogg's Home Economics Department has developed many fine recipes calling for ready-to-eat cereals.

NEW IDEAS FOR LENTEN LESSONS

Kellogg's cereals are especially good in meatless main courses. We have prepared a folder, "Menus and Recipes for Meatless Days," in which you will find many ideas for Lenten cooking demonstrations.

In some of these recipes, Kellogg's cereals are crushed to make a crisp crumb coating, and in others (patties and loaves) they are crushed and used in the mixture to give a special flavor and texture. In the omelet shown below, Rice Krispies are heated whole in the omelet pan and then combined with the egg mixture to make a new and deliciously different omelet.

We will be glad to send you as many copies of this folder as you need. To order, turn to the Coupon Section of this magazine.

Mary I. Barber, DIRECTOR
HOME ECONOMICS DEPARTMENT

Kellogg's

KELLOGG'S CORN FLAKES • RICE KRISPIES • PEP
RAISIN BRAN FLAKES • 40% BRAN FLAKES
ALL-BRAN • SHREDDED WHEAT • KRUMBLES

. . . Nutritious

Ice Cream is an important everyday food. It supplies many nutrients.

Ice Cream is a good source of Vitamin A and riboflavin (Vitamin G) and contains other vitamins found in milk.

Calcium, necessary for strong bones and teeth, is supplied, too! Ice Cream provides high-quality, muscle-building proteins . . . those found in milk. All of these nutrients promote health and well being.

. . . Delicious

Ice Cream feels good . . . looks good . . . tastes good. Combined with crunchy, toasted nuts, filled with tangy fruits and flavored with America's preferred taste-thrillers—Ice Cream has become a universal mealtime and between-meal favorite. And no wonder! In what other food do you find such a pleasing, satisfying combination?

Nutritional value and delicious taste account for the invaluable role played by ice cream in our nation's health and welfare program.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods and Nutrition

The presence of this Seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

National Dairy Council

111 North Canal Street
Chicago 6, Illinois

A non-profit, educational organization promoting national health through a better understanding of dairy foods and their use.

(In writing to advertisers, please mention the journal—it helps.)

How home economists are using these new, FREE recipe cards

Note the comments on the Macaroni Creole recipe above—

"Excellent results—very popular."

And on the Peach Krum Dessert—

"Excellent. Children like this dessert."

IN OTHER WORDS, the blank space on the front of the recipe cards is for individual comments and menus.

Open the 4 x 6 folder and you will note that, in addition to the recipe, the ingredients are given in both weight and measure; also the size of the individual portions. On the back is the recipe's contribution to Federal School Lunch Patterns, Type A and Type B.

Free Recipes in Group I

Fifteen lunchroom recipes for salads, vegetables, sauces, and desserts are included. Titles include: Tomatoes and Onions, Creole Vegetable Salad, Bean and Tomato au Gratin, Fruit Bread Pudding, Peach Krum Dessert.

Free Recipes in Group II

Six lunchroom recipes are in this group: Escalloped Corn and Luncheon Meat; Peas and Diced Yellow Turnips; Mexican Noodles; Creamed Salmon on Rice; Golden Fruit Punch; Luncheon Meat, Egg and Celery Sandwich Filling.

Also included with Canco recipe cards are "Information Cards" explaining the Federal School Lunch Program . . . a buying guide for canned foods . . . canned food facts . . . and helpful information for planning school lunch menus.

Start your files now

Send the coupon below indicating which group you want.

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HOME ECONOMICS SECTION, Dept. 00
230 Park Avenue, New York 17, N. Y.

Please send free Canco recipes in Group I.....
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Your Name.....
Your Institution.....
Street Address.....
City.....State.....

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JH-2-47

Teach Rayon with VISUAL AIDS

TEACHERS agree that visual material helps make almost any subject more understandable. This is particularly true with scientific subjects, such as rayon. Facts about rayon that are presented visually are mastered quickly and retained for a longer time.

Before preparing our new visual aids, we checked teachers to find out their needs and desires, so that we could give them material that would be most useful. Using their suggestions as a guide, we made sure that our charts were large enough to be seen from a distance . . . our film a practical length . . . our film strip supplemented with detailed descriptions, etc.

The visual material on rayon which has been prepared to fill your requirements is listed below. We hope you will find it useful and practical.

TWO LARGE-SIZE WALL CHARTS — *"Weave and Fabric Identification" Chart* — Includes clear photographs of the most important types of rayon fabrics. *"Ironing Chart for Rayons"* — Lists the correct amount of dampness and iron heat for various types of rayons.

Both of these charts are included in the 1946-47 edition of the "Short Course in Rayon." The "Short Course" gives complete material for an up-to-date teaching program on: Planning a Wardrobe, Buying Rayons, Sewing with Rayon, Caring for Rayons, and Background in Rayon.

UNIQUE FILM UNIT — A semi-technical, 4-unit educational package giving key steps in the manufacture of rayon. Includes: (1) silent film strip for detailed study, (2) sound motion picture showing "flow" of processes, (3) commentary and reference leaflet reproducing all pictures in the film strip, (4) users' guide with suggestions for use of entire unit. For classes in Science, Textiles, Consumer Education, and General Home Economics.

TWO EDUCATIONAL KITS — Kit I—the Viscose Process; Kit II—the Acetate Process. Each kit 50c. The steps in the manufacture of rayon are illustrated by actual samples (raw material, yarn, etc.) plus photographs. Complete descriptions are included.

USE COUPON IN THIS ISSUE TO ORDER

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

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A Lesson as old as history

. . . YET AS NEW AS TOMORROW

History has taught the lesson that those peoples of the world who enjoy adequate amounts of dairy foods grow stronger, remain more virile and live longer than peoples who must do without.

Yet, it's a lesson that needs to be taught again and again; for, even here in America, we still do not consume enough dairy products to meet full nutritional needs, according to government reports.

The Sealtest Laboratory Kitchen helps to solve this problem in a practical way for teachers and housewives. Its new issue of the Sealtest Food Adviser is filled with nourishing recipes and menus which include milk, cream, butter, buttermilk, ice cream and other dairy products.

Send for your free copy, today. In classroom or home, promote *good nutrition* by teaching that "Dairy Foods Should Be Daily Foods."

Recipes, menus, timely party hints —beautifully illustrated in color. Send for your copy of the latest issue. Just write to Mary Preston, Sealtest Laboratory Kitchen, 230 Park Avenue, New York 17, N. Y.

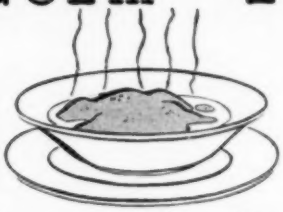
NATIONAL DAIRY PRODUCTS CORP. Sealtest

Tune in the Sealtest Village Store, starring Jack Haley, Thursday Evenings, NBC

Nutrition Studies Show
WHEAT GERM* SUPPLIES
HIGH QUALITY PROTEIN

This Hot Cereal

Extra-Rich in Wheat Germ* Protein



Cooks in 10 Seconds

When you recommend foods for their protein value, remember that wheat germ supplies protein of high biological value; and hot Ralston contains 2½ times as much wheat germ as whole wheat itself.

That's why delicious, nourishing hot Ralston can replace, in part, protein-rich foods such as meat, eggs, cheese or milk. When food prices are high, this is particularly important to remember.

Another important point: Besides supplying excellent protein, wheat germ is the richest cereal source of thiamine. A 1-ounce serving of Ralston supplies 1/4 of a young child's, 1/6 of an adult's daily requirement of this essential vitamin *for less than 1½¢.*

Flavor is a point, too! Hot Ralston has a rich, heart-of-wheat flavor that makes it a favorite with everyone.

FREE! Helpful Teaching Kit

To step up student interest in nutrition, get Ralston's popular Teaching Kit used last year by 25,000 teachers. 1946-47 edition revised and enlarged. Use this coupon

Ralston Purina Company, Nutrition Dept.
33D Checkerboard Square, St. Louis 2, Mo.
Please send, free, Teaching Kit on Wheat, No. C359

*Name*_____
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*City*_____ *Zone*_____ *State*_____
(Offer limited to residents of Continental U. S.)

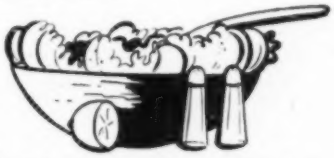
Now, let's take up the subject of lemons...

1. Lemons, you know, have more uses in the kitchen than any other fruit. There are few other foods we use in cooking which help so much in so many ways. Moreover, lemons are HEALTHFUL. They are an excellent source of vitamins C and P. Good source of vitamin B_1.

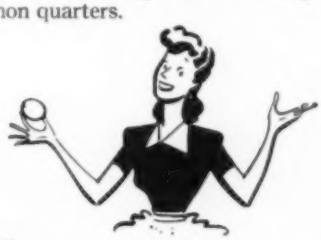
2. Here are some examples of how emons help to add health and flavor to meals. First of all, there's lemon pie—always a favorite dessert. It takes the fragrant tang of fresh lemon juice and peel to make the kind of lemon pie that makes your reputation as a cook!

3. It's gracious to serve tea any time. And, of course, lemon is a *must* with tea. The moment you add lemon you'll notice the tea changes from brown to clear amber. That means any bitterness is gone and true tea flavor is released.

4. There won't be any "leftover" in the vegetable bowl at dinner if you put a dish of lemon quarters on the table right beside it. Fresh lemon juice restores garden-fresh flavor to green and root vegetables. Also, try serving breakfast juice with lemon quarters. Lemon improves flavor and adds health.



5. Salads will taste fresher when you use fresh lemon juice as the sour ingredient in the dressing—any dressing. As for lemon when it comes to fish—well, that's taken for granted. For real savoriness, be sure you serve yours garnished with generous lemon quarters.



6. Lemons, too, are useful for removing stains from linens, as a hair rinse, for keeping hands soft and white—you can probably think of a dozen more ways they help. So it's a good idea to keep lemons on hand always. And you'll be getting the best and juiciest when you buy Sunkist Lemons in trademarked tissue wrappers. They are the finest from 14,500 cooperating California and Arizona citrus growers.

for good health and good flavor

Sunkist

CALIFORNIA LEMONS

MAKE YOUR RESERVATION NOW

Application for Housing Accommodations

ST. LOUIS, MO.

American Home Economics Ass'n. **June 22–28, 1947**

For your convenience in making hotel reservations for the coming meeting of the American Home Economics Ass'n. on June 22–28, 1947 in St. Louis, hotels and their rates are listed below. Use the form at the bottom of this page, indicating your first, second and third choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations if your request calls for rooms to be occupied by two or more persons. All reservations must be cleared through the housing bureau. ALL REQUESTS FOR RESERVATIONS MUST GIVE DEFINITE DATE AND HOUR OF ARRIVAL AS WELL AS DEFINITE DATE AND APPROXIMATE HOUR OF DEPARTURE, ALSO NAMES AND ADDRESSES OF ALL PERSONS WHO WILL OCCUPY RESERVATIONS REQUESTED *MUST* BE INCLUDED.

Hotel	For one person	For two persons		2-Room Suites
		Double bed	Twin Beds	Parlor & Bedroom
American	2.00–3.00	3.50–4.00	5.00	
Chase	3.50 & up	5.00 & up	6.00 & up	10.00 & up
Claridge	3.00–4.00	4.00–6.50	5.00–6.50	10.00 & up
Coronodo	3.00 & up	5.00 & up	6.00 & up	8.00–13.00
De Soto	2.65–7.00	4.00–7.00	5.30–10.00	10.00
Jefferson	3.50–5.00	4.50–6.00	6.00–8.00	12.00–20.00
Lennox	3.00–5.00	5.50–6.00	5.50–6.50	10.00–11.50
Lindell Plaza	3.00	4.00	5.00	
Majestic	2.00–2.25	2.75–3.25	4.00	
Mark Twain	2.75–3.50	4.00–5.00	4.50–5.50	
Mayfair	3.00–6.50	4.00–8.00	5.50–8.00	10.50 & up
Melbourne	3.20–4.20	5.30–6.80	5.30–7.30	
Park Plaza	4.00–8.00		5.50–10.00	10.00–15.00
Roosevelt	3.00	3.50	4.50	
Statler	3.50–5.00	5.00–7.00	6.50–9.00	

All reservations must be received not later than: **JUNE 7, 1947**

Housing Bureau, American Home Economics Association
910 Syndicate Trust Building, St. Louis 1, Mo.

Please reserve the following accommodations for the: American Home Economics Association in St. Louis, Mo., on June 22–28, 1947.

Single Room..... Double Bedded Room..... Twin Bedded Room.....
2 Room Suite..... Other Type of Room.....
Rate: From $..... to $..... First Choice Hotel.....
Second Choice Hotel.....
Third Choice Hotel.....

Arriving at Hotel (date)..... hour.....A.M.....P.M. Leaving (date)..... hour .....A.M.....P.M.

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of *both* persons for *each* double room or twin bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

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(Individual Requesting Reservations)

Name.....

Address.....

City and State.....

If the hotels of your choice are unable to accept your reservation the Housing Bureau will make as good a reservation as possible elsewhere providing that all hotel rooms available have not already been taken.

Detroit Public Library

(In writing to advertisers, please mention the Journal—it helps.)

Why some shower curtains are mildew-resistant

One of the applications where the *differences* and *advantages* of Celanese* acetate yarn are readily appreciated is in its use in shower curtains. In selecting shower curtains, one is concerned with water repellency and in addition, with the important factors of quick drying and mildew resistance.

Mildew is a collective term for a number of cellulose eating fungi. In a dry, cool atmosphere, these fungi remain dormant but under damp, warm conditions, they become very active and cover the surfaces of certain fabrics with their growth. Since shower curtains are constantly subject to dampness and heat they can be the ideal breeding ground for mildew.

Celanese acetate yarn does not support the growth of foreign organisms because Celanese synthetic yarn is a true chemical compound, *cellulose acetate*, and not just cellulose, as cotton is; or regenerated cellulose, as is viscose process rayon yarn. Thus, while cellulose is not resistant to mildew fungi, cellulose acetate is. That is why shower curtains of Celanese acetate yarn are mildew resistant.

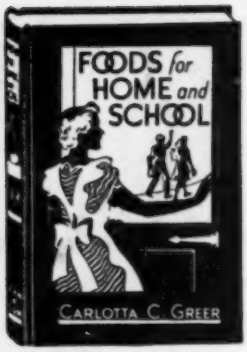
Fabrics of Celanese yarn dry more quickly because of the low moisture absorption of Celanese fibres—have a high degree of dimenstonal stability in their resistance to stretching and shrinking.

To be sure of obtaining the many advantages inherent in modern Celanese synthetic yarn, look for the Celanese label when you shop for clothes or fabrics. There's a difference well worth seeking —that's why quality manufacturers are proud to associate their fabrics with the "Celanese" trademark. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

*Reg. U. S. Pat. Off.

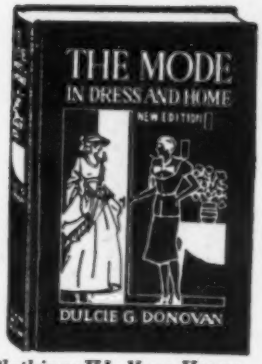
"There's a quality difference worth knowing about"

Celanese* CHEMICALS . . . TEXTILES AND PLASTICS



YOUR HOME AND YOU
AND
FOODS FOR HOME AND SCHOOL

By Carlotta C. Greer



Your Home and You and **Foods for Home and School** were written by one of the most experienced home economics teachers of America—experienced in teaching pupils of the age level for which the books are to be used. The texts are standing the rigorous test of class room use.

The two books vary in type—**Your Home and You** covers the whole field of home economics making it effective for a composite course. **Foods for Home and School** is a book for a separate course in foods. Many schools offer both types of courses. **Your Home and You** and **Foods for Home and School** both have a place in the well-organized school. These books are attractive with eye-arresting illustrations.

Your Home and You is organized in seven units. These units indicate the broad scope of the book—*I. Food is More than Flavor; II. Helping your Family; III. Self-Development—Manners, Personality, and Vocations; IV. Wise Buying and Budgeting; V. Personal Appearance and Clothing; VI. Your House and Home. VII. Play and Work for Leisure Hours.*

A teacher has remarked: "Experienced teachers know that certain points in a topic need to be stressed. In Miss Greer's book these important points are strongly emphasized. The author 'hits the nail on the head' in each topic." Teachers and pupils like **Your Home and You.** As the title suggests, discussions are directed *to the pupil.* Chapter headings evidence direct, informal style, *Facts and False Notions about Nutrition*; *"Waste Not, Want Not"*; *Good Appearance Counts.*

FOODS FOR HOME AND SCHOOL

By Carlotta C. Greer

The 1946 edition of this book brings it up to date regarding nutrition facts and food techniques. In step with present day conditions, economy and conservation are strongly emphasized. Recipes are revised to include food alternates. Questions introducing each chapter and topic stimulate the pupil, for example, *Why are custards wholesome desserts? How should one eat a cream puff? Why is it a good thing to cook vegetables having skins without paring? Are tender cuts of meat more nourishing than tough cuts? Are white shelled eggs better than dark shelled?*

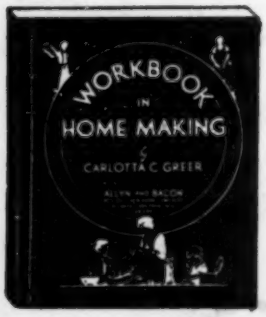
THE MODE IN DRESS AND HOME

By Dulcie G. Donovan

Personal charm is the keynote of Mrs. Donovan's book. To help girls to be attractive, to be popular, to learn how to sew, to take care of a home and of children, are important objectives of the book. How to find a job, how to live happily with others at home and in school, how to become a worthy member of society, are key studies.

WORKBOOK IN HOMEMAKING

The 1946 edition of Miss Greer's workbook.



OTHER TEXTBOOKS IN HOME ECONOMICS

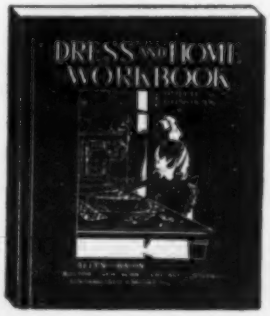
THE GIRL TODAY: THE WOMAN TOMORROW
Lucretia P. Hunter

LOOKING TOWARD MARRIAGE
Johnson, Randolph, and Pixley

BOYS' GUIDE TO LIVING
Fay Mack Scharmer

DRESS AND HOME WORKBOOK

The workbook to accompany the Mode in Dress and Home is designed to make the study of clothing and homemaking easier and more interesting. When completed it becomes a permanent record of the year's accomplishments.



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